

NOVEMBER 1999 25c

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**100**  
Pages

# ROD & *Custom*

1999

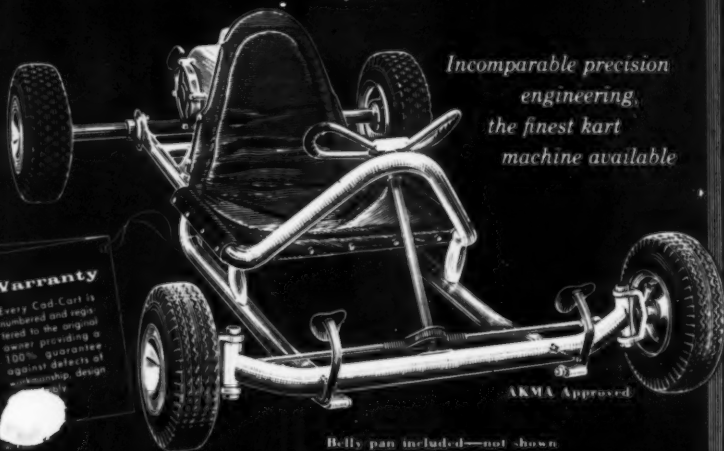


SKCA NATIONALS

## KARTS IN COMPETITION

ROADSTERS PAST, PRESENT, FUTURE

# Cad Cart®



*Incomparable precision  
engineering,  
the finest kart  
machine available*

## Warranty

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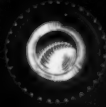
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Belly pan included—not shown

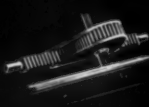
From drawing board to final testing, there has been no compromise with quality. Each Cad Cart is complete and ready to roll as advertised, including Heliarc welded chrom-moly steel tube frame and all bolts and washers Cadmium-plated, Polished cast aluminum wheels, Luxury-padded black naugahyde upholstery, 48" wheel base and 36" tread with extreme low center of gravity. Center mount engine and drive for perfect balance. Clinton A-490, 2 cycle engine. Cad Cart is fully equipped to one standard...the finest...with one price of \$289.50, F.O.B. factory plus state tax. Terms are 25% down with order, balance on delivery.



Hardened, ground king pins with Zerk fitting. New departure: sealed ball bearings, axle set 10" center, 4" combles—self-aligning ball joint steering rod ends.



Exclusive with Cad Cart, these highly polished cast aluminum wheels—designed for lightness, balance and beauty.



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Unlinked clutch and spool disc brake with unique jack shaft arrangement for competition quick change gearing—chain-driven primary and final drive.

Prices and features subject to change without notice.

**Also available without engine.**

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# 3 to 1 Favorite at Azusa!

(karting's first National Championships)

here's  
the  
engine  
designed  
and  
engineered  
for karting



- Standard and reverse rotation models
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- Steel rod for strength and long life
- Case hardened crank
- Drive end accommodates standard clutches
- Lightweight (13½ lbs.) and compact
- Snappy 2-cycle acceleration

## King of All Class Competitions

That's right! West Bend engines were a 3 to 1 choice of kart owners over the next popular make at karting's first National Championships held at Go-Kart Raceway at Azusa, California, July 10-12. Choose the proven favorite in karting, see your West Bend distributor today!

|            | H.P. | R.P.M. | Bore/Stroke | Cu. In. Displ. | Drive End Dia. |
|------------|------|--------|-------------|----------------|----------------|
| SERIES 510 | 3    | 4500   | 2" x 1½"    | 5.10           | ¾"             |
| SERIES 700 | 5    | 5500   | 2¼" x 1¾"   | 7.00           | ¾"             |

Fuel line kit, muffler assembly, mounting bracket available from authorized West Bend distributor. For name and address of distributor near you, write:

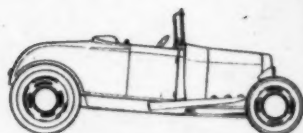
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# ROD & Custom

member automotive press association

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## STREET ROADSTERS



## KARTS IN COMPETITION



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**ROD &  
Custom**

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enclosed is \$3.00 for one year ☐  
\$5.00 for two years ☐

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I COULD'VE  
GOTTEN THE  
ISSUE TWO WEEKS  
EARLIER..





This month's Starting Line photos pay homage to two related yet vastly different types. On the left, two karts rapidly accelerate past the looping flagman at a recent national championship. The same race day found direct drive machines getting their familiar push.

**THIS ISSUE** of R&C is the milestone marking two years since we introduced the motoring public to a strictly localized activity involving tiny four-wheeled structures powered by surplus lawn mower engines. Skittering about on an unused parking lot provided low-cost thrills in a package to fit the family budget as well as each member of the family itself. In a story called "Putting Wheels Under the Peasants" we gave the first coverage to a sport we chose to call — a title which the world has clasped to itself — *go karting*. This descriptive terminology is often shortened to "karting", for to such proportions has the sport grown that the simpler term suffices to all but the vastly uninformed.

Occasionally called to task by readers in the aforementioned group who maintained that any correlation between karts and hot rods or customs was pure fancy, this publication stuck to its guns and continued to report on the snowballing effect visible across the face of the land. On several occasions, we found that accurate reporting meant virtual devotion of our entire editorial section to the mites. Even so, much karting coverage was held out for lack of space, along with our beloved rods and customs. R&C was soon recognized as the unofficial handbook of the karting sport with the result that we felt mixed emotions — having a sense of fatherly responsibility on one hand and on the other wondering if we had not created a monster. Our pangs of conscience were increased when the letters poured in from long-time readers, objecting to the curtailment of features on dragsters, show cars, superchargers and taillights. While a wealth of this type of reading was available in R&C's companion magazines, Hot Rod, Car Craft, Custom Cars, Motor Life and Motor Trend — our loyal following anguished, but stuck by. Some of our old friends took our word that the proof of the kart is in the riding and now number among the strongest supporters. Other new friends have gratified us with letters of praise and encouragement. Wanting never to offend *any* readers we had but one clear course. We must have more space, yet without increase in cost. Much analyzing and planning was done with the result that this issue brings you sixteen more pages — a full 100 in all — that we may give full coverage to the phenomenal two year growth of karting, yet include a section to warm the heart of any rod & custom lover, the Street Roadster. The magnificent response by advertisers to this anniversary bonus issue, while necessitating postponement of several features on karts and roadsters till next month, indicates the strides of the industry to meet the demand and makes this issue a shopping guide to end all. ●

lynn wineland

ROD & CUSTOM

# DRIVE A WINNER\*...

McCulloch-powered  
"Super A" Class  
400 B



**\*274**

(slicks and upholstery optional  
at extra cost)

drive a

**Go Kart**

TM



\* At the recent National Championship Road Races held by the independent Go Kart Club of America, 3rd, 4th and 5th places in "A" class, 5th in "B" and 3rd in "C" were taken by Go Kart (Mfg. Co.) Racing Team karts — exactly as may be purchased by any individual. Higher places were garnered by expensive "Specials" or highly modified production models. The Go Kart factory entries were tops in total number of win points as well as having the highest average number of wins per kart entered over all factory teams entered.

Choose the winning combination to suit your personal needs and budget. Build it or buy it — there's a Go Kart tailored for you.

|                      | LESS ENGINE | CLASS "A"     |               | "SUPER A" |
|----------------------|-------------|---------------|---------------|-----------|
|                      |             | CLINTON A-400 | WEST BEND 510 | McCULLOCH |
| KIT                  | \$104.50    | \$129.50      | \$174.50      | \$249.00  |
| WELDED KIT           | \$123.00    | \$148.00      | \$193.00      | \$267.50  |
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name ..... age .....  
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**Go Kart**

MANUFACTURING COMPANY, 6300 IRWINDALE, AZUSA, CALIF.

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## by LEE

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1959 Ford Diamond. Red diamond on white, black, red or blue background. Light shines through diamond only.

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1959 Ford Flat Cap. Plain smooth red plastic. Curves over rim. Easy to install with three screws.

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Space prevents showing full line here. We make lenses for all popular cars... many styles for some makes. For pictures and prices, send \$1 (refunded on first order) giving make and year of car. One-third must accompany all C.O.D. orders. We pay postage if full price is sent with order. DEALER INQUIRIES INVITED.

## LEE PLASTIC CO.

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## OUR READERS

### LIKE, WOW!

Enclosed please find fotos of my pride and joy, a 1938 Oldsmobile 4-door. If the fotos are gone, it's probably because some space characters have stolen them to use for space ship plans. It is nosed and decked, and has been chopped 8". The rear windows have been blanked out, and a '59 DeSoto rear window is used in place of the stock one. Fins from a '58 Impala top scoops are used in the rear fenders. Quad headlights from a '58 Merc Turnpike Cruiser are used in canted position. The grille is made up of 65 chromed bullets set in 2 '49 Merc grille shells, one inverted. Front bumper is a sectioned '59 Buick rear unit. Stock taillights are frenched in, and Imperial taillights are set inside the rear windows. A sectioned '56 Caddy rear bumper is used. Upholstery is green and black pleats on the seats, door panels and headliner. Floor and pedals are green, too. Outside color is golden orange, with liberal usage of metallic blue scallops. The car is lowered 9" in front and 6" in the rear. Engine is stock.

Osgood K. Crudpebble, III

Plainfield, N.J.

P.S. I hope youse guys know that this is all in fun. My real car is a 12" sectioned '54 Packard 4-door, with '56 Plymouth fins.

EGADI! The photos are... GONE!

### GAL RODDERS

Here is a picture of our '39 Austin roadster that was salvaged for \$10 out of a junk yard.

This is the result of spending two years in restoring it. The interior has been restored, the frame extended, a "sixty" Ford engine mounted in along with the "60" transmission, mechanical brakes replaced by hydraulics and the paint job was done by us in a beige enamel.

What do you think of a job done by two rod and custom gal fans! Our neat little rod is named "Well Stacked". Come on you guys—let's see some

ROD & CUSTOM

## WRITE—or wrong

competition.

Elsie Gracy & Doreen Stavenger

P.S. Guess where we put the gas tank?

• In the taillights? (Those "sixties" get fabulous mileage.)



### SHOEBOXES IN SOONER STATE

Spotted letters in R&C August issue re/"Ernest Levesque's letter in May issue".

Attn: The Wheelers—come here if you want a '50 Ford—Oklahoma's crawling with 'em—even my brother owns one!!!

Jim Buswell

Okla. City, Okla.

• Even "Putt Putt" Pelly has one.

### ASK THE MAN WHO OWNS ONE

In your April issue of Rod & Custom you covered a supposedly 1932 Plymouth coupe. I have reason to believe that you are wrong. The car in your mag is a '31. The difference is the '31 has an oval back window, a shorter hood, a higher top, and various other things.

Enclosed is a picture of my partly finished car. It is a 1932 Plymouth coupe with a "53" Merc engine, "49" Ford transmission, overdrive and rear-end. The engine is stock except for triple pots. The interior is done in red and white naugahyde. The dash is a combination of 42 Buick and 49 Merc instruments. The body has a metal top and filled hood vents. The doors and rumble seat lid are operated electrically. The exterior is fin-

continued on p. 14

NOVEMBER, 1959

# CUSTOM RACING SLICKS

COMPARE TREAD  
THICKNESS AND WIDTH

- ALL KART SIZES
- TWICE AS THICK
- FULL 4" WIDE
- 1/4 & 1/2 MIDGETS
- LONGER LIFE
- BETTER CORNERING
- CUSTOM SLICKS ARE YOUR BEST BUY

Dealer  
Inquiries  
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SEND 10¢ FOR ILLUSTRATED BROCHURE  
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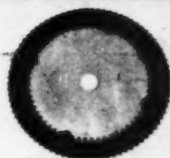
DETROIT

## WAYNE SPEED & SPORT SHOP

34752 Stacy, Wayne, Michigan • Phone PA 1-0493

|                    |  |         |
|--------------------|--|---------|
| Chain:             | #35 (per foot)                             | \$ 1.25 |
| Chain Guard:       | West Bend, Clinton, Power Products         | \$ 3.95 |
| Gas Line Kit:      | Dual Engine, all tanks                     | \$ .75  |
| Gas Tank:          | 5½ pint, 3 quart, 1 gallon                 | \$11.95 |
| Header:            | Clinton A400, A490, E60, E65               | \$ 5.95 |
| Header:            | Power Products, 1147, AH47, AH81           | \$ 5.95 |
| Header:            | West Bend, 510, 645, 700                   | \$ 5.95 |
| Header:            | West Bend Special<br>(for chain clearance) | \$ 6.95 |
| Manifold Kit:      | (Complete)                                 | \$18.70 |
| Manifold Kit:      | (Standard)                                 | \$ 8.95 |
| Motor Mounts:      | Clinton, Power Products, West Bend         | \$ 9.95 |
| Piston:            | Clinton, E60, E65, A400, A490              | \$ 8.95 |
| Pressure Pump:     |  | \$ 5.95 |
| Pressure Pump Kit: |  | \$11.50 |

There are still some area dealerships and distributorships open. Write for information.



### QUICK CHANGE

Now you can change ratios in just 90 seconds. Please specify 72 tooth or 82 tooth. Fits stock 60 tooth sprocket.



### PISTONS

Now available for Clinton A-400, A-490, E-60 and E-65. Coming soon for Power Products AH-81 and West Bend engines. Some pistons available in oversize.



### Power Products AH-81

Featuring

- ★ NEW six-valve reed plate
- ★ Tuned exhaust header
- ★ Ram air velocity stack (long or short)
- ★ NEW 4-position motor mount (right or left)

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# NATIONAL WINNERS USED PALMINI CART EQUIPMENT



## GAS TANKS

Available in 1 gallon, 3½ quart bullet shape and 5½ pint gas tank. This can be hooked up for pressure.



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Janesville, Wisconsin • Phone PL 4-3338

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Send 50¢ for Big 14-page catalog and hop up data and equipment. HAVE A WINNING CART WITH PALMINI PRODUCTS.

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|-----------------|--|---------|
| Reed Plate:     | Clinton, A400, A490, for diaphragm carb. ....                | \$ 7.95 |
| Reed Plate:     | Clinton, A400, A490, for float carb. .                       | \$ 7.95 |
| Reed Plate:     | Clinton, E60, E65 and Power Products, AH81 .....             | \$ 7.95 |
| Reed only:      | (Fits all reed plates)<br>Berillium or Copper .005", .008" . | \$ .25  |
| Rings:          | (Set of three), Clinton, all models. .                       | \$ 2.75 |
| Sprocket:       | 10, 11, 12, 13 teeth — ¾" bore .                             | \$ 3.00 |
| Sprocket Kit:   | (Quick Change) 72 teeth, 84 teeth .                          | \$ 8.95 |
| Stack:          | (Ram Air Velocity) long or short .                           | \$ 3.95 |
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## ENGINEERING

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BUY IS—**

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**Completely assembled, painted  
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| SC-400 Standard w/Clinton A-400 engine. | SC-60 Custom w/Clinton A-400 engine.                           | SC-81 Custom w/2 Clinton E-60 Chain Saw engine.              |
| SC-400 Custom w/Clinton A-400 engine.   | SC-400 Custom (shown) w/Power Products AH-81 Chain Saw engine. | SC-81 Custom Twin w/2 Power Products AH-81 Chain Saw engine. |

- ☐ I enclose 25c for color brochure of models and accessories.  
Please rush my ☐ Black ☐ White ☐ Red ☐ Blue ☐ Gold painted Scat-Cat.  
Terms: 25% with order, balance C.O.D.—F.O.B., Kansas City, Kansas.
- |   |   |
|---|---|
| <input type="checkbox"/> SC-400 Standard . . . . . \$159.50 | <input type="checkbox"/> SC-400 Custom (shown) \$199.50 |
| <input type="checkbox"/> SC-60 Custom . . . . . 259.50      | <input type="checkbox"/> SC-60 Custom Twin . . . 349.50 |
| <input type="checkbox"/> SC-81 Custom . . . . . 279.50      | <input type="checkbox"/> SC-81 Custom Twin . . . 369.50 |
- ☐ Equip my car with SLICKS on rear for extra \$14.50.

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SCAT KART  
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Fox Body Co.  
FUTURA INC.

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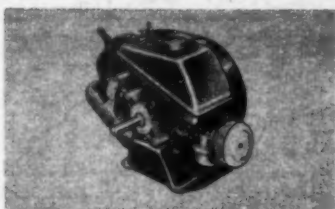
# LET'S GO-KARTING

Introducing Clinton's Power Twins



Stock No. 21404—COUNTERCLOCKWISE

| A-490            | H.P. | R.P.M. |
|------------------|------|--------|
| Air Cooled       | 1.2  | 1800   |
| Horizontal Shaft | 1.9  | 2800   |
| 20 lbs.          | 2.5  | 3800   |



Stock No. 21526—CLOCKWISE

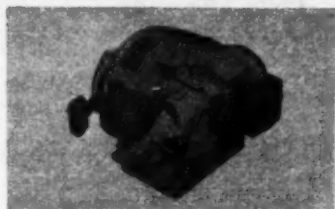
| A-490            | H.P. | R.P.M. |
|------------------|------|--------|
| Air Cooled       | 1.2  | 1800   |
| Horizontal Shaft | 1.9  | 2800   |
| 20 lbs.          | 2.5  | 3800   |

## Now...Power One or Both Wheels

Designed especially for Hot Rods, Go-Carts, Buck-Boards, etc. One with clockwise rotation and one with counterclockwise rotation. A time-tested basic engine which has proved itself time and time again.



| E-65-CCW*   | R.P. | R.P.M. |
|-------------|------|--------|
| Air Cooled  | 4.5  | 5000   |
| 18 1/2 lbs. |      |        |



| E65-CW*     | H.P. | R.P.M. |
|-------------|------|--------|
| Air Cooled  | 4.5  | 5000   |
| 18 1/2 lbs. |      |        |

\* CCW means counterclockwise and CW means clockwise — as viewed from PTO end.

### Only Clinton's "Challenger" Matched Pair, Gives You All These Features

1. Needle and Ball Bearings on crankshaft.
2. Drop forged connecting rod.
3. Jeweled connecting rod (needle bearings).
4. All position Diaphragm Carburetor and fuel pump.
5. Large 5" diameter recoil starter for quick starting.
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13. Versatile mounting base.
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Accessories Available: 1 qt. fuel tank, clutch and sprocket, foot throttle control.

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MAQUOKETA, IOWA

# PARTS for CARTS

## CHROME WHEELS

- ☐ Deluxe Chrome Steering Wheel. Heavy duty for fast cornering. Cartmen.

\$4.95



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- ☐ 60 Tooth ..... \$4.95  
☐ 72 Tooth ..... 5.25  
☐ 84 Tooth ..... 6.50  
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- ☐ 12 Tooth, long hub, specify bore, for 510, 645 and 700 ..... \$4.50



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- ☐ X-100-Conversion Kit for West Bend 750 Engine, Hardened Crank and Needle Bearing Rod ..... \$19.50



## WEST BEND ENGINES

- ☐ #750, Remanufactured & perfect. Complete with gas tank, retractable starter and muffler, ready to go. LIMITED OFFER ... \$34.95

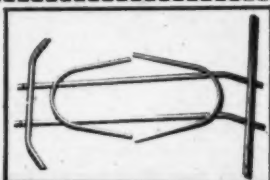
- ☐ Motor Mounts, for WB Engines .... 2.75

ALSO AVAILABLE  
 3-4-5-6 Horsepower  
 CHAIN SAW ENGINES



## CLASS "A" WINNER

- ☐ The McCutche Cart Engine MC-10; 5.3 Cu. in. 10 lbs. Loop Scavenged, 12 to 15,000 RPM Bearings thruout ..... \$125.00  
 Immediate Delivery, Postpaid U.S.A.



## REGULATION "K" CART FRAMES

- ☐ Precision bent, drilled and notched. Dropped center side rails and front axle. Two hoops, rear axle. Regularly \$19.95.

LIMITED SPECIAL OFFER ..... \$8.75

- ☐ INSTRUCTIONS FOR ORDERING: Check items wanted, enclose 50% deposit. Balance will be C.O.D., FOB Factory.

# FLEXO PRODUCTS

5180 Venice Blvd. BOSTON, MA 02124

## OUR READERS WRITE

continued from p. 9  
 ished in Tango Red. My future plans are to build nerf bars, custom exhaust, and several other things.  
 Leo Goedde Chelan, Wash.



## EASTERN CUSTOM BOOSTER SPEAKS

I have never written to you before, but after reading your "Readers Write" column I felt I had to. I refer to a letter written in your May 1959 issue. It was written by one of my eastern neighbors who did a good, but unfair job of degrading our Eastern rods and customs. I think this Ernest Levesque was a bit nasty and harsh in condemning our cars, and also a little too generous in describing the Western cars.

True, the West does have more rods and customs, but I don't think the majority of them are any better than the cars from the East. I think that if some of the custom fans from the West came to this vicinity, they would be surprised at the quality and number of our cars; in fact at the present time, a custom as radical and pleasing as the famous Western Aztec is now nearing completion in one of the local custom shops.

I think my Benedict Arnold type friend in Connecticut should come out of the smoke filled pool-room some day, and take in a few good Rod and Custom shows, then give his opinion of the Eastern cars, instead of basing his convictions on his brother's and his friends' cars (which probably look like his interpretation of an Eastern car except that they are raked).

Bill Mac Kenzie Whippany, N.J.

ROD & CUSTOM

# LIGHTER YET?

On the cover of your August issue you have a picture of a dragster that weighs 1210 lbs. which you say may be the lightest Chrysler-engined dragster.

Here in Wichita, Kansas there is a dragster owned by Al Williams that weighs less than 1150 lbs. and runs a blown Chrysler. This car has turned 184 mph. The frame is entirely of aluminum construction.

John Tidwell, Jr., Lloyd Davis

Wichita, Kansas

• R&C is tentatively planning an answer to both these lightweights. Our Chrysler-powered rail will have a body-frame of stressed, quilted aluminum foil. Take THAT!

# READER'S '41

Enclosed are some photographs of my "41" Ford coupe. It is powered by a 1/2 race flathead engine, that is 3 3/4 x 4". It is also ported and relieved, 1/2 Isky cam, Offenhauser head and 2 pot manifold H & C. ignition featuring dual points and coils. It is hooked up to a stock trans. running into a 4.11 rear. The interior is done in blue and white naugahyde and the outside is '54 Buick blue with a metallic tint. All work was done by Larry Formolo who originally owned it, but due to Uncle Sam had to sell it.

Norm Fowler

Princeton, N.J.



# MODEL CAR CLUB

I am starting a nationwide club for model car builders. The club will benefit all members in that it will provide a means of trading ideas and suggestions on customizing model cars. All

continued on p. 18

NOVEMBER, 1959

# DON'T THROW OLD MOTORS AWAY!

Rebuild them good as new by these approved, professional methods



Chilton's complete guide to ENGINE REBUILDING & MAINTENANCE

Here's the famous Chilton manual that helps you put new life in old motors—or even rebuild them completely—almost no matter what may be wrong, and regardless of make or model! It's a master mechanics' guide that shows how to handle even the toughest engine jobs with less work, in less time, by approved "shop type" methods and using standard tools and equipment.

AUTO ENGINE REBUILDING & MAINTENANCE includes complete data on troubleshooting; disassembling engines; reassembling, testing and breaking in; locating and repairing cracks; and all grinding, boring, sleeving, gauging, cleaning and replacement operations, etc. Covers valve mechanisms; cylinders and walls; bearing service; rods and assemblies; cooling and lube systems and all the rest. Every detail of this advanced engine training is explained so clearly that no more than average automotive service knowledge is needed to understand every step. 470 pages. 460 how-to-do-it pictures. Price only \$7.95—money-back guarantee.

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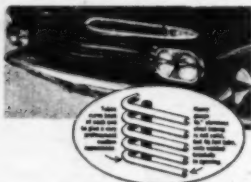
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OUTSIDE U. S. A.—\$8.95 cash with order.

10-day money-back guarantee.

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Sweeping Tubular Stainless Grille Bars Completely Pre-Assembled.  
Guaranteed Rust Proof - Full 3/4" diameter sections.  
Available For 52 - 59 Ford - 55 - 59 Chevrolet - 58 T Bird.  
Must Know Kind of Car and Year Model.



Complete Pre - Assembled Kit

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**58-59 CHEVROLET BEAR LOWERING KIT**

Each Kit Complete . . \$4.95

We Pay Postage

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He talks - he chatters - Highest movement of our starts goes to open and close with loud "Chatter Yuck" - Brilliant Multicolored Eyes gives eerie effect at night. Comes with hanging cord and rubber section cap for easy free way mounting to dash - windshield or rear view mirror.

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Beautification - No Bubbling! War the only cleaner and wax tested by us that would do the job in advanced to do - the fastest safe auto cleaner ever made - Almost instantly dissolves the outer scale of dull road film and faded pigment - restoring the original brilliant finish. The fast wax rubbing paste will last up to 12 months - may be applied to entire car before polishing, without fear of streaking.



No. 163 Car Skin

No. 163 Car Skin

No. 163 Car Skin

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No. 163 Car Skin

No. 163 Car Skin

No. 163 Car Skin

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**SHOOT THE BULL WITH THE BEST OF THEM HONEST BULLHORN**

It Moans - It Groans - It Bellows Like A Bull, Loud and Strong.



Simple Installation

HBN 6 - For All 6 Volt Cars

each \$2.95

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HONEST WESTAYED OUT OF THE GO CART BUSINESS AS LONG AS WE COULD SO WHERE WHO - We may be lost but We get the best.

HONEST Junior Racing Foot Pedal for all Go Carts.

\$5.50 Each



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For all Go Carts. A Thing of Beauty - Complete with Mounting Brackets



Each \$7.95

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Now Your Honest Price

Triple Chrome Plated

18 Gauge Steel Tubing

Triple Exhaust Escape with plates removed means power for competition running.

Pushed in pairs, kits are complete with backing plates, gaskets, chrome hangers, and air tubes.

Honest Nos.

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Complete 28" Kit

for both sides. \$9.95

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Complete 56" Kit

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**SPECIAL**

Floor Shift Transmission Conversion Kit



Complete kit and instructions to convert 40-58 Chevrolet, 49-57 Ford Standard Shift, 49-54 Ford O. D., 49-57 Mustang Standard Shift, 51-54 Mustang O.D., Ford-Lincoln Side Shift and 18 Pontiacs to Floor Shift operation. Must have your transmission, must have, also if not, or O.D.

Each Kit,

Except Cad., LaSalle \$24.95

Cad - LaSalle Kit \$34.95

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12 Separate Designs

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Colors: Red-Gold-White-Black

Each set of 12 Designs

only \$1.00 postpaid

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SEND 25% DEPOSIT ON C. O. D. - SEND FULL AMOUNT ON ITEMS MARKED PREPAID NO CODES FOR LESS THAN \$5.00

My car is a \_\_\_\_\_ Year \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

10-59

Quantity Part No. Description Price

**CHROME OUTSIDE TAIRIPES**

Now in one complete package at a reasonable price - Kit Complete - Nothing Else to Buy - No welding necessary - mount along fender with simple tools - Stop deterioration of rear bumper and paint - A must for station wagons - Pushed in pairs.

Complete Kit for Right and Left Side

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4 Dazzling Colors in 16 oz.

Spray Can

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KK-1 Pagan Gold

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16 oz. Can \$1.98

For Chrome - Stainless

Steel - Polished

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BIGGER - BETTER THAN

EVER - MORE PAGES -

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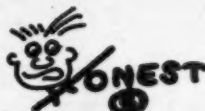
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KART

THE PESTY MENACE OF EVERY TRACK

Don't Pay More



- UPHOLSTERED
- ASSEMBLED
- PAINTED
- READY TO

GO

DELUXE MODEL AT AN HONEST PRICE

We Searched the Field and Came Up With Another Honest Bargain. This Met Our Specifications For A Safe, Durable, Easy To Handle Kart.

Check These Features and Price Against Any Other Made Regardless of Price:

COMPLETELY ASSEMBLED

GREEN ENAMEL FINISH

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SCIENTIFIC PROVEN STEERING YOKE WITH RUBBER HANDLE GRIPS

SAFE POSITIVE STEERING

ALL NEW CLINTON A-400 215 H.P. 2 CYCLE, 8.75 Cu. In. WITH RECOIL STARTER

FOOT OPERATED SPOT BRAKES SAME TYPE AS USED ON INDIANAPOLIS 500 MILE CARS

DEMOUNTABLE WHEELS

HIGH SPEK BALL BEARING WHEELS

REMOVABLE SPINDLES

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4 FULL PNEUMATIC 300 x 5 TIRES INTER-CHANGEABLE WITH REAR

BRAKE AND THROTTLE LINKAGE FOOT OPERATED

AUTOMATIC CLUTCH optional at small additional cost

WITH ALL FEATURES  
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**\$146<sup>66</sup>**

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Add \$15.00 if automatic clutch is desired

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1959 MONEY SAVER  
CATALOG BIGGER-BET-  
TER THAN EVER-MORE  
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FOR ALL TYPES KARTS

4", 5" or 6"

Heavy gauge



Each \$1.50  
Must Know Wheel Size  
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SEND FULL AMOUNT ON ITEMS MARKED PREPAID  
NO C.O.D.'s FOR LESS THAN \$5.00

My car is a ..... Year .....

Name .....

Address .....

City ..... State .....

| Quantity | Part No. | Description | Price |
|----------|----------|-------------|-------|
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HONEST CHARLEY SPEEDSHOP (INC.)

Box RC 1904  
Chattanooga, Tenn.

NOVEMBER, 1959

17



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From Three Exciting

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### THE ORIGINAL Putt-Nik



Completely assembled and painted, inc. upholstery.

#### NOT A KIT.

Individual front suspension, automotive type steering, automotive enamel. Choice of belt or chain drive and of two engines.

Prices Start at

**\$139<sup>50</sup>**

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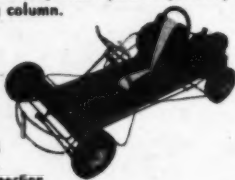


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### OUR READERS WRITE

continued from p. 15

persons interested in joining send a stamped self-addressed envelope to:

Jerry C. Kropp  
69 Pleasant St.  
Danbury, Conn.

### WANTS A KART MAGAZINE

I am a new reader avidly interested in the so-called karting craze. Having just finished your August issue, I would like to put in my two cents about this karting controversy.

I own a 1953 Mercury and have no interest in souping, customizing or otherwise altering my car. To build a car that would compete with other hot rods would take more than my modest salary could bear. I believe that the majority of karters follow this line of logic. Karts for us are the only answer. I myself do not begrudge these hot rodders their fun, if they have the money!

How's about a separate mag for us? Here's to "Go Karts Galore".

Bradley Ryan  
Oneida, N.Y.

● No separate book as yet, Brad, but we hope you'll enjoy R&C's new size—our compromise to have coverage for every taste.

### CYCLE HOUND

Where can I get plans for the Min-A-Bikes found in Aug., '59 issue. Dig your mag the most. Keep up the good work.

Harv Overton  
Elmira, N.Y.

● Polly tells us the response on the "Tyke Bikes" is even better than for his "Tot Rod" (kart) plans. He's drawn up one that's practical, with a popular make kart engine, and sells 'em for two bucks. We'll forward it if you like.

### PIGGYBANK KARTER

I enjoyed your article "From Parts To Karts" very much. I have tried to build a kart several times but each time expense has stopped me. I wonder if you could give me information on how to keep the price down.  
Allen F. Laudenslager, Jr.  
West Chester, Pa.

● Beat it to death!

ROD & CUSTOM



# ALL KARTS NEED



# STEENC

## THE CHEMICAL LUBRICANT

- Mixes 100% with gasoline or alcohols.
- Will not settle out after mixing.
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- Burns clean, will not form carbon in ports.
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## STEEN LUBRICANTS

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# If you can drive you can win in a



**MARK II**  
*Challenger*  
**RACER**

Qualifies for class "B" competition. (dual brakes, dual rod controls for the foot throttle and dual engines).

**\$269<sup>00</sup>**



**MARK I**  
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Qualifies for class "A" competition.

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Simplex Karts meet every requirement of the



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**SIMPLEX MANUFACTURING CORP.**

Dept. RC, 540 North Carrollton, New Orleans 19, La.

# SIMPLEX *Challenger* RACER

## HERE'S WHY...

These superb racing Karts were designed by Bill Muller former Indianapolis race driver and racing engineer to provide (AS STANDARD EQUIPMENT) everything you need to win in top competition. These Challenger Racers offer 25 advantages, the combination of which is not found on any other Racing Kart in the world. Two of these advantages, brakes and steering mechanism are exclusive with the Challengers and are considered by leading racing engineers to be the ultimate in Kart braking and control. Challenger Racers come equipped with a choice of Clinton or Lauson engines but are available with other leading make engines or without engines if you choose.

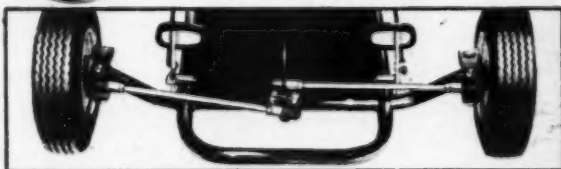
## HERE'S WHY...

The Challenger brakes are two shoe automotive internal expanding brakes. Their braking efficiency at racing speeds is proving to be one of the big plus factors in winning races. They permit the driver when approaching a curve to maintain top speed longer, than Karts with other type systems which must start to brake much sooner.



## HERE'S WHY...

The absolute perfection of the Challenger Racers' Steering mechanism can not be improved. It represents the ultimate in Racing Kart steering and provides a precise turning radii which completely eliminates tire scrubbing and frictional speed losses on curves. \*Patent applied for.



## SIMPLEX *Challenger*

Standard retail price

| MARK I | MARK II |
|--------|---------|
| \$189  | \$269   |

### INCLUDES

|                                    |     |     |
|------------------------------------|-----|-----|
| Completely assembled ready to race | Yes | Yes |
| Crated                             | Yes | Yes |
| Freight paid                       | Yes | Yes |
| Chassis completely welded          | Yes | Yes |
| Painted-baked enamel. Blk. or Red  | Yes | Yes |

### TYPE BRAKES

|  |     |     |
|--|-----|-----|
| Finest automotive two shoe internal expanding brakes | Yes | Yes |
| Internal band brake                                  | NO  | NO  |
| External spot brake                                  | NO  | NO  |
| Scrub on tire brakes                                 | NO  | NO  |

### STEERING

|                          |      |      |
|--------------------------|------|------|
| Diameter-kingpin         | 1/2" | 1/2" |
| Aircraft type fittings   | Yes  | Yes  |
| Shakeproof fasteners     | Yes  | Yes  |
| Precise turning radii    | Yes  | Yes  |
| Wheel size               | 5"   | 5"   |
| Tapered roller bearings  | Yes  | Yes  |
| Fully pneumatic tires    | Yes  | Yes  |
| Hub caps (keep out dirt) | Yes  | Yes  |
| Foot brake pedal         | Yes  | Yes  |
| Foot accelerator pedal   | Yes  | Yes  |
| Replaceable axles        | Yes  | Yes  |

### ENGINE: choice of

|                           |     |     |
|---------------------------|-----|-----|
| Lauson 4 cycle 2 1/2 hp.  | Yes | Yes |
| Clinton 2 cycle 2 1/2 hp. | Yes | Yes |
| Dry air filter            | Yes | Yes |
| Rewind starter            | Yes | Yes |
| All chain drive           | Yes | Yes |
| Front bumper              | Yes | Yes |
| Automatic clutch (s)      | Yes | Yes |
| Seat side rails           | Yes | Yes |
| Full length floor pan     | Yes | Yes |
| Seat and back cushions    |     |     |

are the only extra on these cars. Cost 9.85

**DEALER INQUIRIES INVITED**

# If you can drive you can win in a



**MARK II**  
*Challenger*  
**RACER**

Qualifies for class "B" competition. (dual brakes, dual rod controls for the foot throttle and dual engines).

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**RACER**

Qualifies for class "A" competition.

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of the



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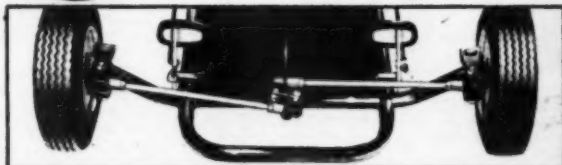
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\*Patent applied for.



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| \$189  | \$269   |

### INCLUDES

|                                    |     |     |
|------------------------------------|-----|-----|
| Completely assembled ready to race | Yes | Yes |
| Crated                             | Yes | Yes |
| Freight paid                       | Yes | Yes |
| Chassis completely welded          | Yes | Yes |
| Painted-baked enamel. Blk. or Red  | Yes | Yes |

### TYPE BRAKES

|                                    |     |     |
|------------------------------------|-----|-----|
| Finest automotive                  |     |     |
| Two shoe internal expanding brakes | Yes | Yes |
| Internal band brake                | NO  | NO  |
| External spot brake                | NO  | NO  |
| Scrub on tire brakes               | NO  | NO  |

### STEERING

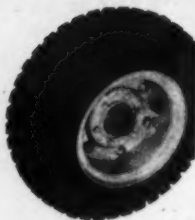
|                          |      |      |
|--------------------------|------|------|
| Diameter-kingpin         | 1/2" | 1/2" |
| Aircraft type fittings   | Yes  | Yes  |
| Shakeproof fasteners     | Yes  | Yes  |
| Precise turning radii    | Yes  | Yes  |
| Wheel size               | 5"   | 5"   |
| Tapered roller bearings  | Yes  | Yes  |
| Fully pneumatic tires    | Yes  | Yes  |
| Hub caps (keep out dirt) | Yes  | Yes  |
| Foot brake pedal         | Yes  | Yes  |
| Foot accelerator pedal   | Yes  | Yes  |
| Replaceable axles        | Yes  | Yes  |

### ENGINE: choice of

|   |     |     |
|---|-----|-----|
| Lauson 4 cycle 2 1/2 hp.                    | Yes | Yes |
| Clinton 2 cycle 2 1/2 hp.                   | Yes | Yes |
| Dry air filter                              | Yes | Yes |
| Rewind starter                              | Yes | Yes |
| All chain drive                             | Yes | Yes |
| Front bumper                                | Yes | Yes |
| Automatic clutch (s)                        | Yes | Yes |
| Seat side rails                             | Yes | Yes |
| Full length floor pan                       | Yes | Yes |
| Seat and back cushions                      |     |     |
| are the only extra on these cars. Cost 9.85 |     |     |

**DEALER INQUIRIES INVITED**

# Midget Racing WHEELS



4" - 5" and 6" Standard and Super Widths. All hub lengths, all bearings from 1/2" to 1" Bore. Also, OFFSET HUBS for Sprockets or Pulleys.

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**HIGH SPEED TIMKEN TAPERED ROLLER BEARINGS**

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WEAR-TUFF**

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Size: 34 thru 44

**ZIPPER SLEEVES**

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Add \$3.00 for padding



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Competition 2 cycle  
oil Burns Clean.  
No Carbon.

1/2 pt. .... \$ .45

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NGK  
PLUG**

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No Fouling  
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The only std.  
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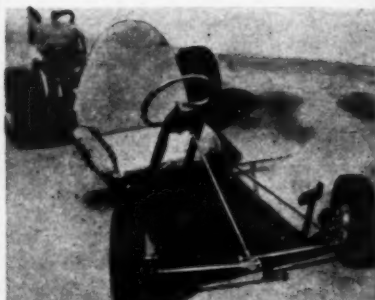


Dealers Inquiries Invited

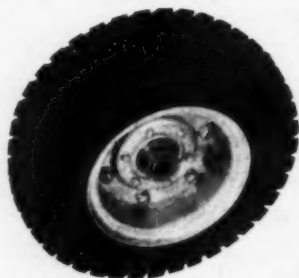
**WBCO**

218 MAIN STREET  
VENICE, CALIF.

# auto



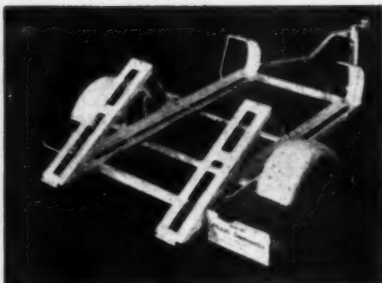
The new competition Bates-Kart model C-1 has incorporated the latest in kart racing innovations. This C-1 model includes many advanced features; maintaining the famous Bates steering axle, the C-1 displays an improved "sure stop" brake unit, plush upholstery for positive driver position and comfort, locked rear axle affording top corner maneuverability and the latest in competition frame construction. For information write: Bates-Kart C-1 Dept F, P.O. Box 72116, Los Angeles 2, California.



Midget racing wheels. Nalpak Corporation features a complete line of small racing wheels. All wheels are steel, bolted construction and cadmium plated. 4", 5" and 6" standard and super widths. All hub lengths, all bearings from 1/2" to 1" Bore. Also, offset hubs for sprockets or pulleys. High speed Timken tapered roller bearings 3/4" and 1" bore, in 10", 12" and 14" O.D. wheels. For information write: Nalpak Corporation Dept. RC-11 1130 E. Florence Ave. Los Angeles, California

**ROD & CUSTOM**

# mart



Multi Midget trailer, designed to fit the needs of the  $\frac{1}{4}$ ,  $\frac{1}{2}$  and cart fans. Constructed of all-welded steel with a solid steel axle. The Trailer features: dual spring suspension, Tongue stand and safety chain, stop and tail-light combination, Timken high speed bearings, and fold down ramp. From: Multi Industries & Mfg. RC-8, 6611 Jurupa Ave., Riverside, Calif.

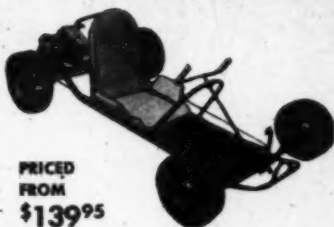


Kart engines and accessories, featuring both the McCulloch and West Bend engines, Flexo Products is rapidly becoming headquarters for anyone wanting to build a better kart. Flexo maintains a large stock of varied HP engines, sprockets, racing wheels, clutches, frame members, brakes and most everything needed for converting or building a better kart. For free literature send a self addressed stamped envelope to: Flexo Products: 5180 Venice Blvd. Los Angeles 19, California.

NOVEMBER, 1959

## Caper Cart

mfg. of the car with a heart



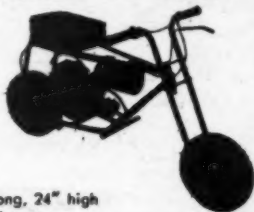
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FROM  
**\$139<sup>95</sup>**

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It Again

**PRESENTING**

## Caper Cycle

**A PACKAGE OF DYNAMITE  
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45" long, 24" high  
dual frame  
expanding brakes  
7 cubic in. engine  
complete,

**\$159<sup>95</sup>**

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price list. Enclose 25¢ for handling.

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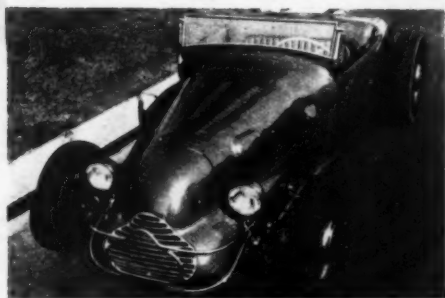


# STREET ROADSTERS

PAST



PRESENT



FUTURE

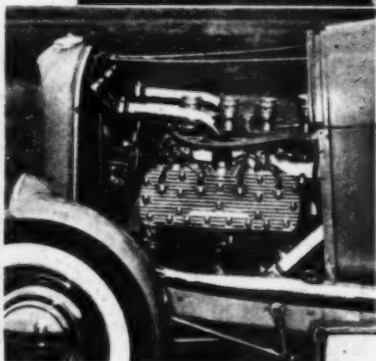
The car most typical of the hot rodding sport is the street roadster. A heritage over the last quarter century has influenced today's street rod, and will continue to dictate the styling of those to come. The three photos above, while taken over 10 years ago, picture the genealogy of cars today. At top is a '29 Ford with little more than the fenders removed, top cut and a '32 shell added. Next, the same model on a '32 frame with flathead V8 mill and all the details. Finally, the '29 again, channeled, and an aluminum nose.

# STREET ROADSTERS

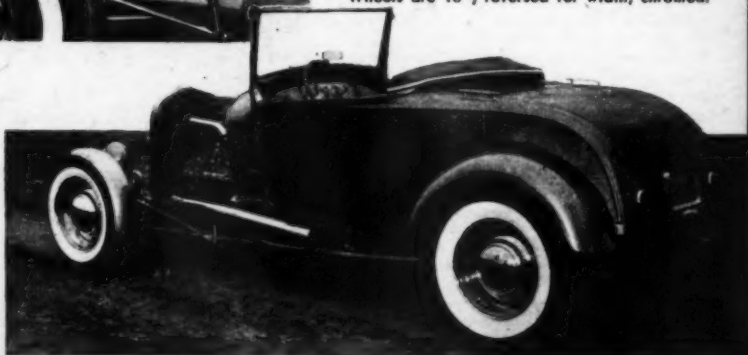
past, present, future

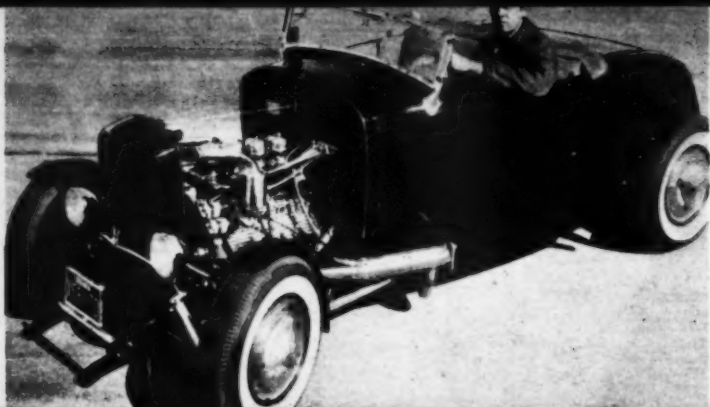
'29 on '32 rails

photos by russ kelly



Long a favorite of roadster builders, the perfect combination of the '29 Ford body set onto '32 frame rails was the answer of how to easily set up the trim '29 for a V8 engine installation. Dick Guasco of Pleasanton, California spent four years whipping his dream into shape. The familiar 59A Merc block was basis for the  $\frac{1}{8}$ " x  $\frac{1}{8}$ " mill. Potvin  $\frac{1}{8}$ " cam, Offenhauser heads, Weiland manifold and Harman & Collins ignition make ForgeTrue piston really fly. Classic '32 shell has been cut 3" for correct relationship with cowl. A Stewart Warner instrument panel fits the '32 dash set beneath the model A cowl molding. Wheels are 15", reversed for width, chromed.

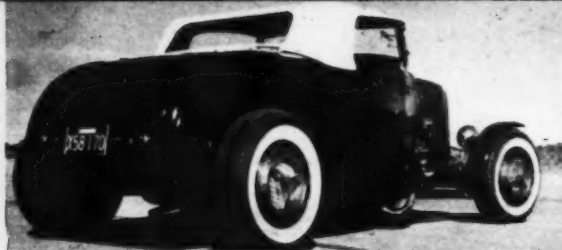




## STREET ROADSTERS

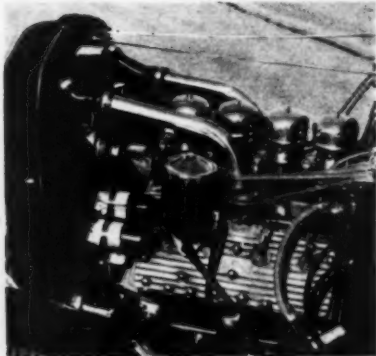
past, present, future

massachusetts deuce



photos by Jim Chasse

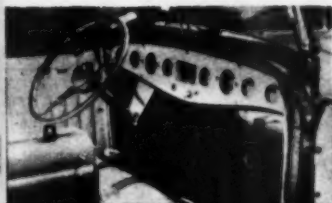
Salvaged from a cellar where it had stood in a foot of water for several years, Eldon Sidebotham's '32 was rebuilt for a year's time with an investment of \$2500. The modified '48 Merc engine has tugged the black deuce along at 107 mph in the quarter. 286" is the new displacement ( $3\frac{5}{16}$ " x 4") and Edelbrock 10:1 heads and 3-pot manifold are supplemented by a H&C  $\frac{3}{4}$ " cam. The Reading, Mass. goer uses a H&C dual coil ignition and delivers power off the Schiefer flywheel by an Auburn clutch through a '39 Ford trans to the 3.27:1 Getz gears. Mobil 7.60 tires on 15" widebase Lincoln wheels put the power on the ground, while up front, 6.40's set on 15" Merc rims. A 3" drop axle lowers the nose still further and a 7" frame "Z" drops the rear for a moderate rake. Front and rear ends are chromed for utmost in appearance.



All  
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All Ford is the claim made by Max Allen's '32, a familiar sight in Wenatchee, Wash. Formerly a Stock Car racer, Max, with help from his wife, gave it up and built the part deuce for fun driving and an occasional show. Better satisfied, Max has taken top place in several car shows in his area. A '57 Ford engine with very little rework provides a lot of punch in the lightweight roadster as well as being thoroughly dependable. As with many a roadster, the problem of fenders was solved with the popular cycle-type that steer with the front wheels. A 5" chop lends style to the lavishly chromed, Bahama Blue bomb, and Alaskan White Naugahyde sets off the clean interior. \$2500 was expended in the process of building which consumed a year and eight months time. "Stu Johnson and Gary Knowls really deserve credit", says Max.

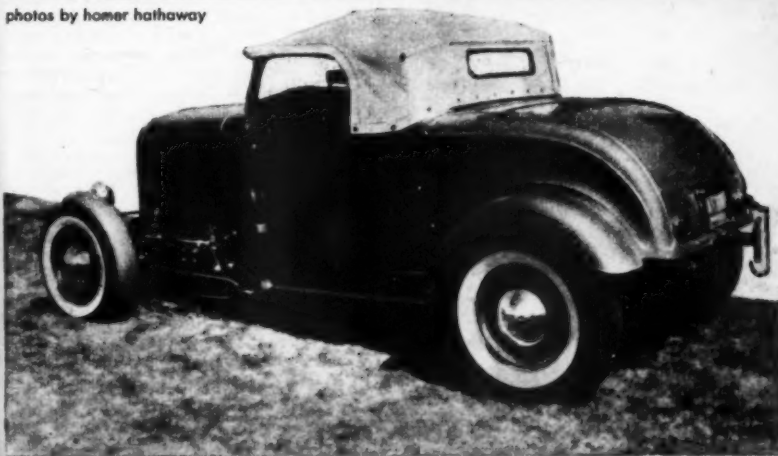


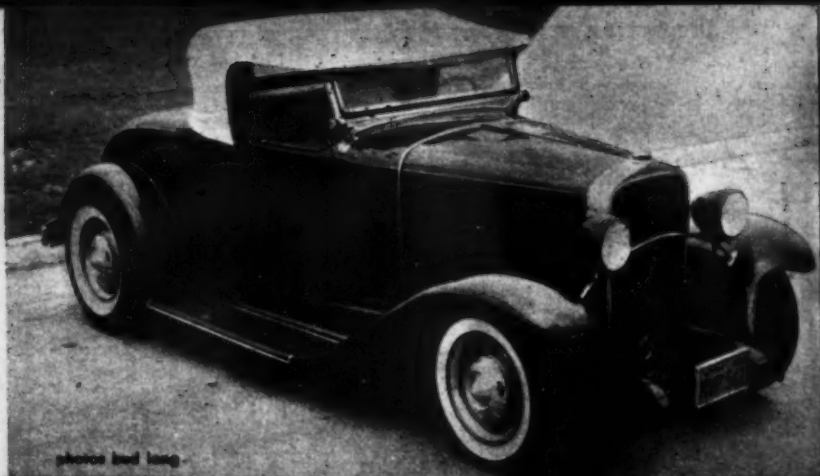
## STREET ROADSTERS

past, present, future

**washington '32**

photos by homer hathaway



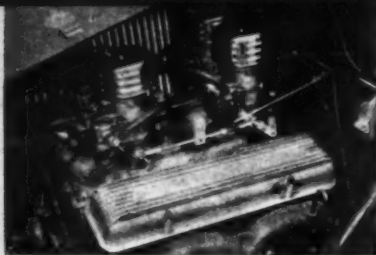


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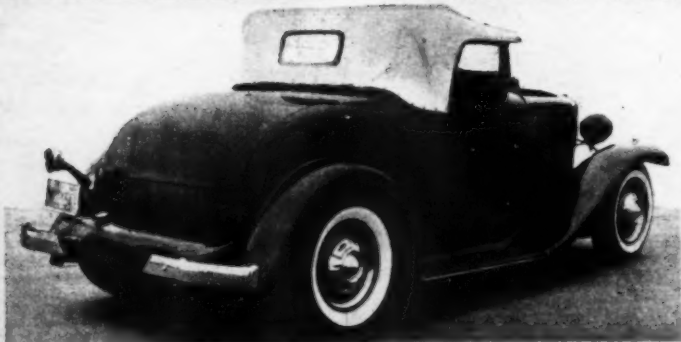
## STREET ROADSTERS

past, present, future

### california chevy

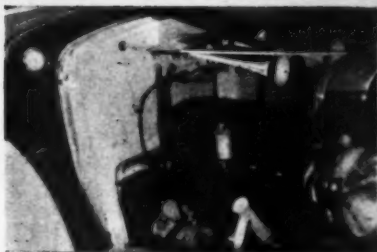


Combining the new with the old has been a formula for success in many fields far from rodding, but here, too, it paid off. Gary Scherer, of Downey, has a 103 mph street job using good looking, but rare '31 Chevy body fitted with 283" Corvette mill. Gear box to handle load is '48 Packard pumping into '53 Chevy rear end. Lowering is with 4" dago, 4" chop and use of 15" wheels mounting 5.90's and 8.00's. '39 hydraulic brakes are up front, '53's on the rear. White Naugahyde interior and top by Don's Trim Shop in nearby Norwalk contrasts with '56 Cadillac Cobalt Blue paint.

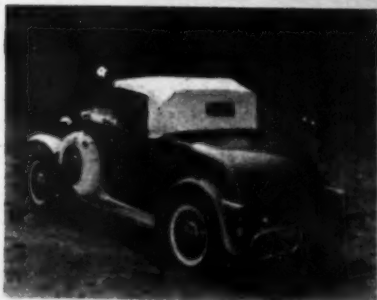




## canadian chevy



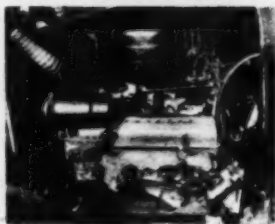
A \$9.00 junker was the basis for Jack Quinn's '31 Chevy, which is restored to the best possible condition, plus having a few added attractions to put in some punch. A '51 engine with milled head and homemade dual main folds was installed with power routed through a '48 column shift transmission and rear end. The Nerf bars were made of 1" steam pipe, hand filed and chromed, as were all original parts. New hardwood went into body now painted Sahara Gold Metallic. Bill Ball of Toronto did white Naugahyde interior and top. Mild 2" chassis drop is accompanied by use of 6.70x15 tires for lower silhouette. Shocks were replaced with tubular Gabriels. Grafted on taillights are from '53 Chevrolet.





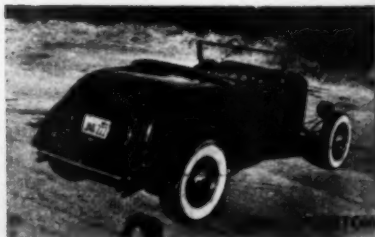
photos by palacy

'32 ford / '55 chevy



Certainly one of the most popular engines of our time is the lightweight '55 Chevy V-8, so what could be more natural than to couple it with the classic '32 Ford roadster to make the last word in street rods. This was the reasoning leading to Ralph Guldahl's deuce. Several owners contributed to the building of the car and Art Chrisman built the dash, utilizing Stewart-Warner dials, and the rakish rear fenders. Entire front suspension has been chrome plated. Black beauty's home is Studio City, California.

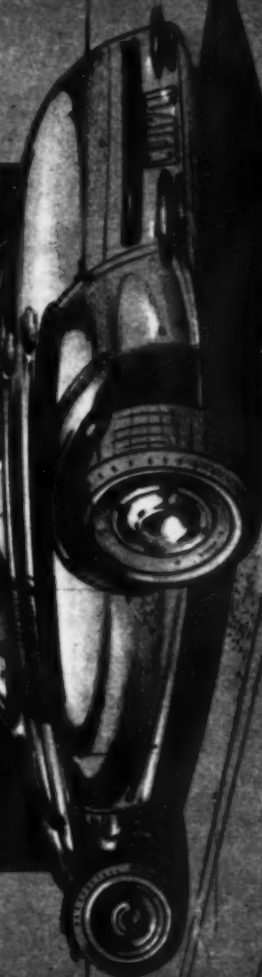
**STREET  
ROADSTERS**  
past, present, future



palacy

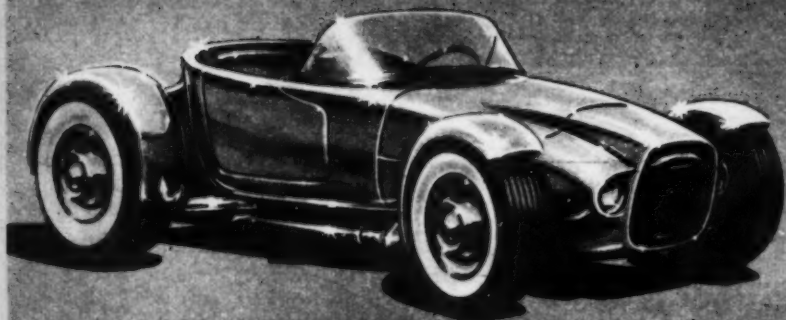
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# 1000 MILES PER HOUR



Young Clark Kelly is no stranger of age and that has shocked Alan's best friend, The Noble Piers. The poor defuncted 1932 Ford, being several years advanced of Kelly's age, was mostly submitted with Clark's former hand brought it to his own moment's standards. Consequently, full body jets and wrap-around wheels contributed to the accelerating program while the familiar '32 grille shall exhibit its elegant appearance despite the hazard. Cycle-type leaders add a dash, so do the two exhaust stacks fitted into a trough in the body skin. The mystery of two pipes on one side is explained when a glimpse beneath the hood reveals a de-loused 674.500 hphg set on its side.





## STREET ROADSTERS

past, present, future

**"THE" roadster**

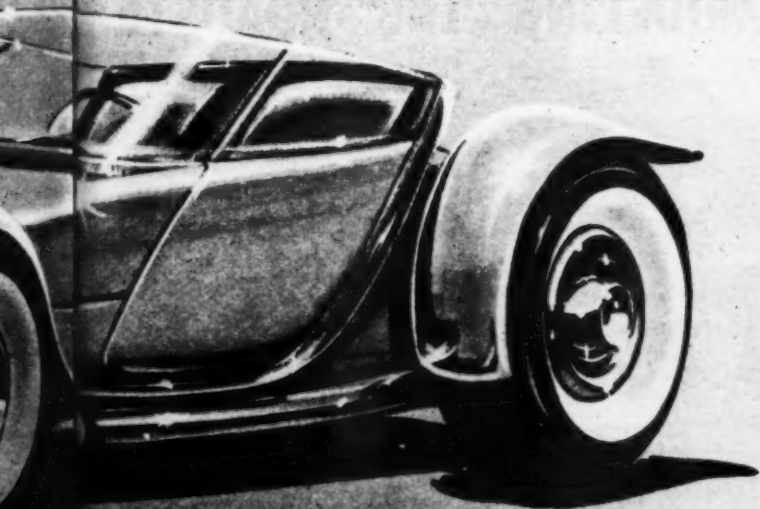


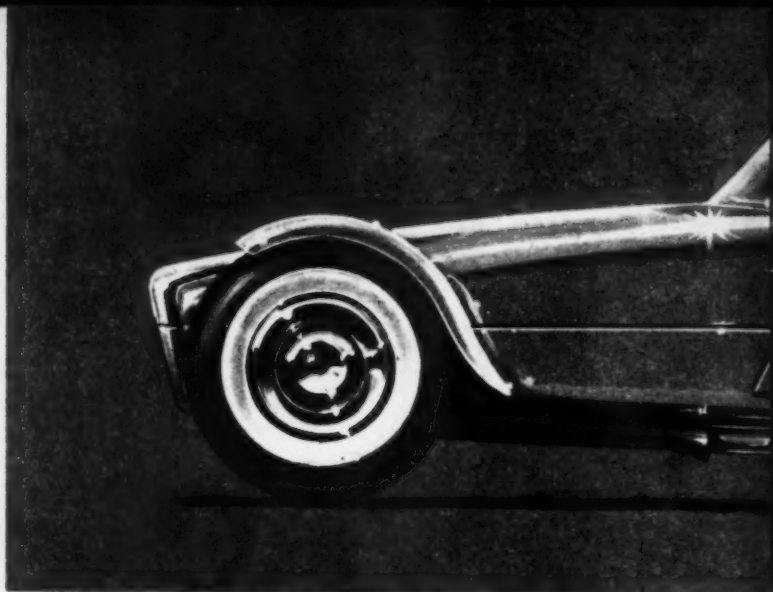
# REMODELING "THE" ROADSTER

by Joe Henning

Beginning in May of 1955, E&C began a series called "BUILDING THE ROADSTER — for a dollar a pound". O. C. Ritch and Joe Henning teamed up on the writing and drawing to put forth what may well be the most interesting series ever found in E&C. As the years slip by, THE Roadster, as it originally appeared (above, left) and for all its forward thinking, wasted toward obsolescence. Now, Joe Henning brings it up to the contemporary standards of '60.

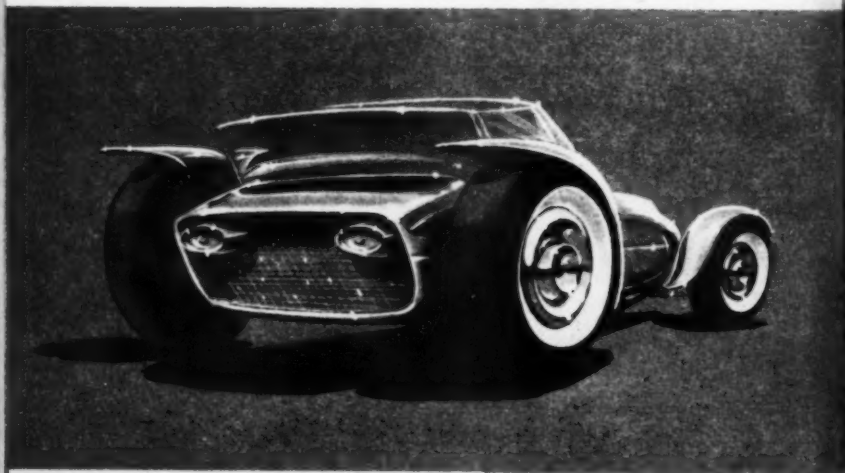
Several power choices are available. The Corvette engine, fuel injected, with four-speed gearbox is first choice. Another would be on a lower horsepower plane, yet give plenty of snap in the light chassis. This would be the Ford Falcon engine and transmission combination. The frame is of space tube construction for light weight and rigidity. Suspension is conventional solid axles to hold the price down, yet do a presentable job.





## REMODELING "THE" ROADSTER

continued

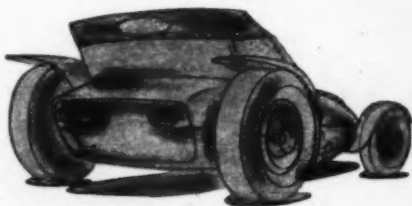


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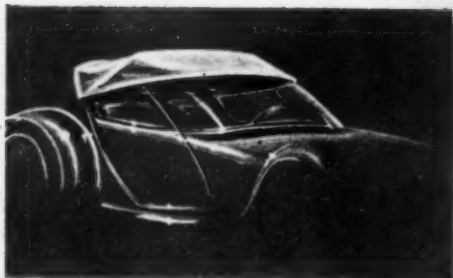
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The T-type roadster bucket will, as before, be fabricated from fiberglass. Not much attention to tradition is rendered as homage to the past tends to increase functional aspects of car. The smaller brass radiator set into the curved opening of the air duct on the new version has given way to simple, flat grillework whose theme is repeated in the recessed end of the turtleback. Taillights are '58 Ford lenses.



hooded fenders are effective, yet moreish than first version. Windshield rises around cowl to door line and is made with fixed windows that in turn fold into high bucket back. Hood is one piece and on removal gives access to engine, steering, exhaust, radiator, headlights and backside of a panel for ease of instrument wiring, plumbing. The top is for emergencies only and folds into the tiny trunk next to the gasoline tank.





**the family fun machine  
puts on its racing gear  
as r&c  
takes a long look at...**



Karting got a boost when United Press showed Air Force General Curtis Le May tooling kart during races at Andrews AFB near Washington. Enthusiast Le May is hot rodder and advocates sport to keep airmen on toes and teach them to use and develop mechanical ingenuity.

38



**rod & custom  
COVER**

**ROD & CUSTOM**

...n, sun and a fine run typify . . .

# The GKCA Nationals

TOU & CUSTO  
COVER AGE



## PREPARATION

The day event began July 10th and much last minute preparation led to showdown races run on the final day. Major teardowns occurred in pits.

Go Kart Raceway in Azusa, Calif. was donated for Go Kart Club of America 1st National Championship Road Races by major kart manufacturers who have track for testing uses.

photos by uhler, beindorf; lynn



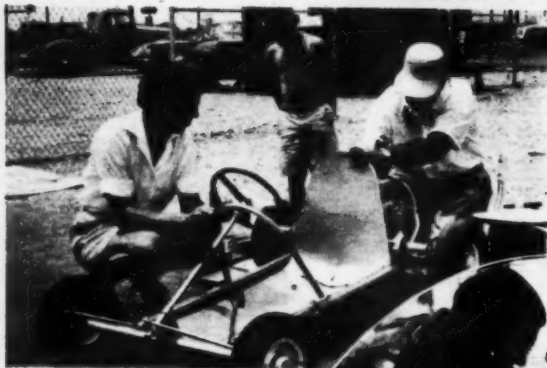


Bug Engineering opened shop to help out other factory teams. Racing model Bugs, above, stand ready while shop crew helps out Cad Cart and Go Boy team members. Fred and Bob Fox, right tune Go Boy brought on train from Wisconsin. Go Kart Mfg. let burned out Caper Carters use their plant.

## The GKCA Nationals

contin

### PREPARATION



Even competition karting can be a family sport as Dad tunes, Mom holds and son watches proceedings to make sure nothing goes wrong.

Wife, Barbara, adjusts Be Hunt's armband number as first heat draws near. Caper Cart bunch are from Walla Walla, Wash. (Not Okla.)

Hot Rod Magazine Research Editor Bob "Stirling Mouse" Pendergast, waits impatiently for completion of final tune on Potvin "Dragonfly" K8.



RACING

ROD & CUSTOM



Drifting close to photographer's side of haybales on turn 11 (see track layout p. 39), Al McDonald leads Bill Landefeld in "C" heat. Both drivers are cycle engine fans.



Hovey Hawk team from Northern Calif. showed up powered by Mercury two-man chainsaw engines. This crew really got the feel of the track, shown left on banked turn 7.

Carella crewman Joe Nitti crosses up coming from right of photo into turn 6. This fooler had many of the newcomers buffaloed and is a constant challenge to the regulars.



# The GKCA Nationals

continued

## RACING

Wham! A rough side trip into the dirt alongside turn 1 was experienced by this driver who drifted too wide, but safely regained the track. Perfect safety record is credit to GKCA.



Somebody Goofed and virtually entire Go Kart Racing Team spun out in turn 2 on first lap. Action was hot all the way, but surprisingly few driving errors occurred and very little equipment failure was experienced.





**Spectacular driving style of Jim "The Beard" Goodman made him a real favorite with the crowd as well as other drivers. Leading (above), Jim thrusts beard forward, apparently to cut path into air for streamlining through turn 11.**





## The GKCA Nationals

Chuck Balsiger on twin McCulloch "Hot Rod Magazine Special" is chased into turn 7 by similarly powered Dick Gear, destined to cop the championship by winning every event. "Hot Rod" kart had chain problems.

continued



RACING

ROD & CUSTOM



Automotive magazine personnel got into karting early, having been among first to know of it. Always found at big meets these men find the sport a pleasant way to combine work and play. At far left on facing page is Motor Life's Bob Young on a Bug. Dale Neef of Hot Rod pilots a Cad Kart at the right, above R&C's own Larry Hester on a Golden Rocket kart by Standun Industries.



(Below) Hotly contested C Class event saw eventual winner Al McDonald's Villiers bomb leading Go Karters Duffy and Don Boberick, GKCA President through esses of turns 9 and 10. Cycle engined cars proved capable.





# The SKCA Nationals

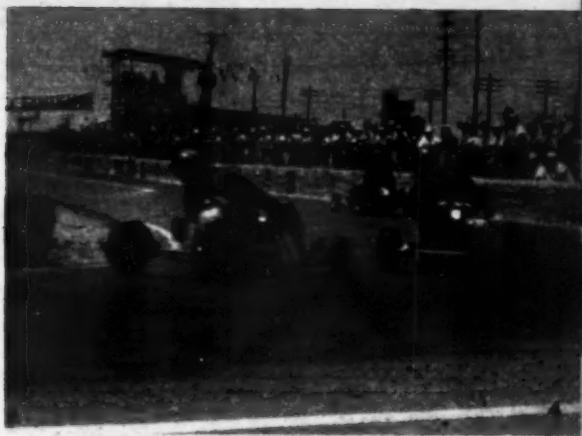
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LADIE'S DAY

ROD & CUSTOM

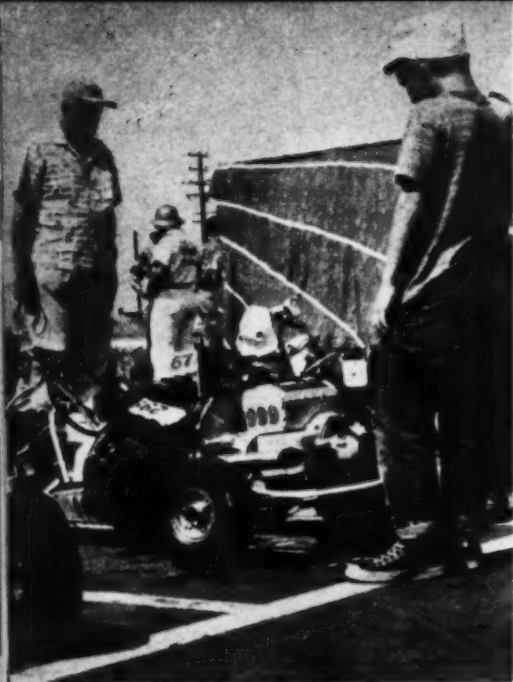
NE



This competition karting is a real, he-man sport ... that gals often have an advantage in! Diminutive Faye Pierzon (Mrs. Bug Engineering), has a good lead over many an opponent by virtue of her weight, not to mention her driving ability. She currently holds the "A" Class record on the Go Kart Raceway and won the coveted pole position for the Nationals, as shown in the start scene on our cover.

Scene (1), lap 1, shows Faye in 3rd spot behind Connors and Yamane. Act (2) lap 2 as the positions reversed. Watch the style turn 11 (3), as she cuts inside Jim Yamane to win the first heat (4). The "breaks" came up on turn 6 in the second heat as a throttle sticks and a chain snaps (5). Coming from the back for 2nd in heat 3, Faye has smile at R&C camera. Yamane 1st, Murray 3rd.





nts hold an eternal fascination for small  
ys — and big ones, too. A two-man chainsaw  
wered Caretta holds this small viewer's gaze.

story team entries displayed neat and color-  
gurb. Texas group chartered planes to fly  
ts and crews to Nationals, had kart name in  
b on back of coveralls. Caretta team of  
els (Art Ingels, "Father of Karting") and  
velli matched kart paint jobs in black, yellow.

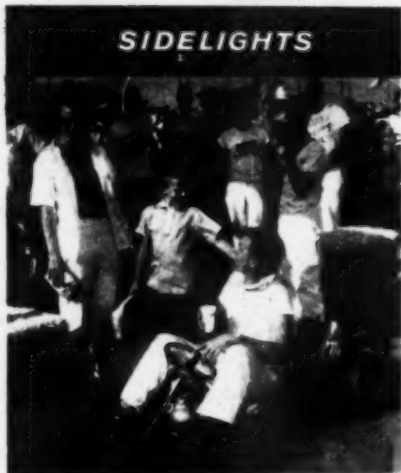


Only entrant to run in two classes,  
Duffy Livingstone beats heat under  
a geysering water hose following  
two consecutive races.

**ROD & CUSTOM**

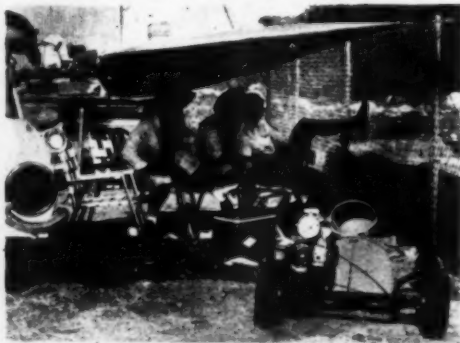
# The GKCA Nationals

continued



"Gee, Dad!" Champion Dick Geer's family stand by following third heat waiting for announcement that Dad has won Sweepstakes.

Texas' ladies watch race progress under tarp at trackside. Picnic jugs abounded and Snack Stand did flourishing business in unexpected hot spell, using over  $\frac{1}{2}$  ton of ice in drinks. Light clothing helped and T-shirts abounded.



Dick Vandevser, first president of GKCA and clown prince of karting amused spectators, photographers and entrants with exhibition of two-wheeled gymnastics during intermission.

Sportsmanlike gesture by Go Kart's Duffy Livingstone took place following chain break on Faye Pierson's rival team Bug. Duff helped husband Tom Pierson get gal back into race.





**TROPHY TIME**

**FINISH**



## The GKCA Nationals

continued

Circled (below, left) Champions are Al McDonald, C Class; Dick Geer, B Class winner; and Jimmy Yamane who ran off with A Class honors. Other fine drivers who fell only shortly behind took other honors, listed below.

### A Class

(Trophies awarded by  
Steen Lubricants)

|                     |           |
|---------------------|-----------|
| 1st Jimmy Yamane    | 1100 pts. |
| 2nd Faye Pierzon    | 626       |
| 3rd Spencer Murray  | 564       |
| 4th Richard Connors | 547       |
| 5th Bill Jeffery    | 411       |

### B Class

(Trophies awarded by West Bend)

|                       |           |
|-----------------------|-----------|
| 1st Dick Geer         | 1200 pts. |
| 2nd Gilbert Evans     | 694       |
| 3rd Dick Hill         | 577       |
| 4th Chuck Balsiger    | 478       |
| 5th Duffy Livingstone | 428       |

### C Class

(Trophies awarded by Simplex Mfg.)

|                       |           |
|-----------------------|-----------|
| 1st Al McDonald       | 1000 pts. |
| 2nd Bill Landefeld    | 927       |
| 3rd Duffy Livingstone | 480       |
| 4th Lee Miller        | 465       |
| 5th Ben Hunt          | 333       |



Jim Yamane grins and blushes as Trophy Queen clad in golden metal suit hands over the hardware. Steady driver topped A Class.

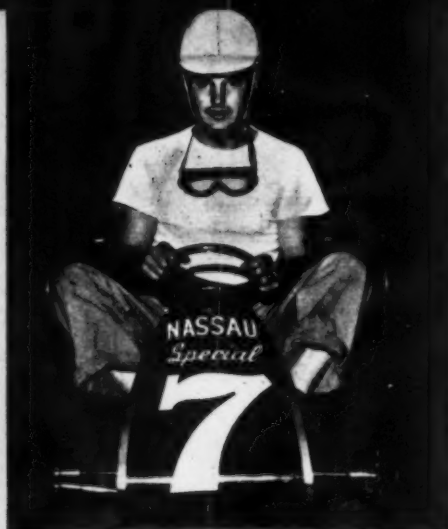
Faye Pierson got 2nd Place in Class A and presentation was made by Duffy Livingstone, pinch-hitting as Trophy "King". The lady is a Champ!

Perpetual cup for Sweepstakes Champion and smaller replica to keep were taken by Dick Gear with perfect 3-win score. A real winner!

Smiling Sweepstakes Champion Dick Gear sits astride highly developed, twin McCulloch-powered Bug that carried him in first for all three heats of Moto Cross event.







# KARTS IN COMPETITION

Twin-milled Bug herded by Dick Keen will be contender at World's Championship of Karts held during Bahamas Speed Week at Nassau this December. Sponsored by the Grand Prix Kart Club of America, the event will gather together greats from every phase of auto racing—including karting—to vie for world's kart title.

*continued growth of the sport inspires a...*

## NEW NATIONAL KART CLUB

Formation was recently announced of the Grand Prix Kart Club of America, a new nationwide organization for the betterment of the karting sport. President of the group is Capt. Sherman F. Crise, internationally famous racing figure who is prominent in the famous Bahamas Speed Week sports car races held each year in Nassau. Other notables on the Board of Directors are Jim Rathmann of Miami, Florida whose performances from hot rods to Indianapolis have made him an outstanding personage in racing circles and Tom Pierson of Southern California, manufacturer of the Bug, one of the top production and racing karts in the field. Others include George Marshman of Pennsylvania, Marvin Goldberg of Maryland and Robert Plarr.

The new group has several tracks across the country under its wing and provides a splendid insurance program. Naturally, rules for safety are well enforced and the new group has paid close attention to points decided upon by other kart groups. Championship events staged by or under the

sanction of the GPKCA will pay a purse to the winners, thus defraying expenses in traveling to compete. Even so, costs to members are kept to minimum, the overhead being borne by spectators at the events.

Planned activities in the near future include a National Championship at the Dorney Park track in Allentown, Pa. on September 6th. Of 300 lap (on a ¼rd mile track) duration, the winner will receive in addition to the prize money, a fully paid trip for himself, his kart, and his wife or mechanic, to Nassau. There, they will be the guests of the Bahamas Automobile Club for one whole week and on December 5th will compete in the International Grand Prix de Karts, run on the famous Oakes Course. Many internationally known drivers are taking up karting and plan to compete in the kart races. Such well known men as Stirling Moss, and Pedro and Ricardo Rodriguez are said to be readying themselves for the big action. First Place in this race will find the winner \$1000 the richer, and wearer of the crown of the World's Kart Champion.

*continued on p. 46*

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CUSTOM NOVEMBER, 1959



## KARTS IN COMPETITION

*jefferson county park go kart raceway*

St. Louis Go Kart Club began running on their new \$25,000 track near House Springs, Mo., July 4th. The 540' x 350' land holds the most complete track layout seen to date. Of 4/10 the total length, three banked turns are incorporated, as well as a QM oval. Fits, teachers and timing are provided and this tract will be the scene of some hot racing action.





## **miniature monza alton, illinois**

Lying just east of St. Louis, the  $\frac{1}{2}$  mile course at Alton is a 12 turn, 20 ft. wide track with one 40° banked bend from which it gets its Monza title. The first all-kart road course in the midwest, the property is next to the Alton Dragway. Track Manager is Bill Hardin Jr., owners are John Storry and Mel King. The Central Illinois Region of the GKC operates and supervises the events. As many as 60 karts are regular participants. An interesting start procedure is used. Le Mans style running start. Not for drivers — for pushers.

photos by jack erwin





Start is seen above, with kart pushers running Le Mans style as gun goes off to karts where drivers wait impatiently for shove to get under way. At left, tight action on banked, Monza turn. Aerial shot, below, and drawing show track layout. At the bottom, racing for this family pauses as future handler takes a swig from chief mechanic. Bill Turnbeough's "C" Class machine has West Bend's controlled by kill buttons on steering wheel (bottom, left). Sunday events often pull spectators from the adjacent drag strip to see what the fuss is.

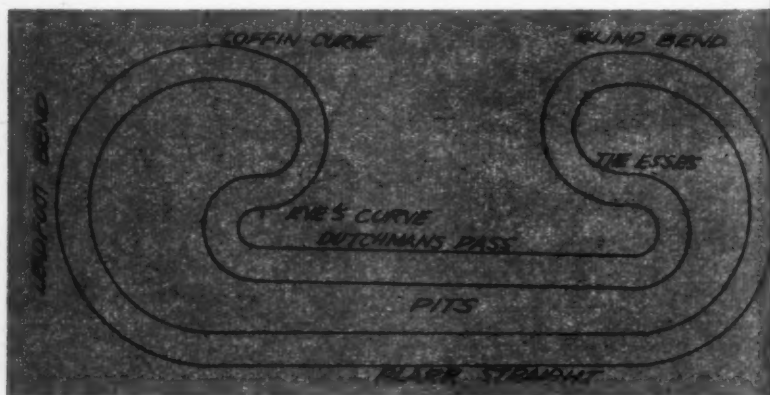
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## KARTS IN COMPETITION

dorney park speedway, allentown, pennsylvania



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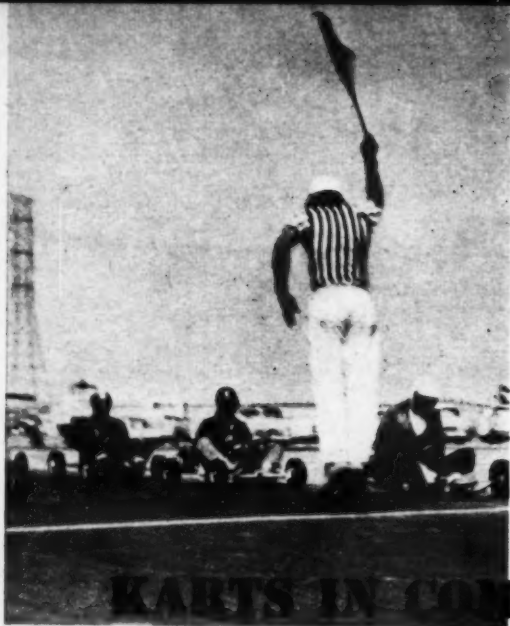
A popular karting spot for enthusiasts in the greater New York City area, Dorney Park falls under the sanction of the Grand Prix Kart Club and stages regular events, including night races. John Christy (left), former editor of Car Craft and R&C contributor, is regular attendant and staunch booster of karting. Presently editor of well-known automotive magazine in New York, John runs single engine Class A kart.

Bill Reickl, local talent, makes good in roll bar-equipped Class B kart, taking checkered flag in Bug.

Pack is strung out through Dorney Bend, heading for finish line. Marty Acker (#12) came through for win.

Rolf Rosengreen's potent #55 with twin Power Products AH-81's elad for the Robert Platt Trophy. A powerhouse.





photos by uhler

# KARTS IN COMPETITION

*butler speedway, los angeles, california*

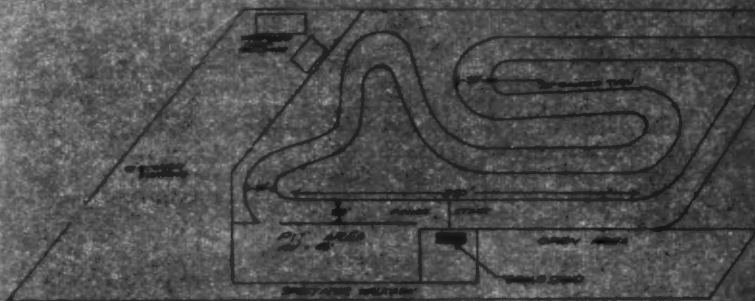


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ROD & CUSTOM





The  $\frac{1}{2}$  mile Butler Speedway located in southwestern Los Angeles, is a neighbor to the famous New Ascot Speedway, where the karts larger counterparts, stock cars and cycles, race. With a variety of curves, one 20 degree banked curve, and large flat shoulders the track offers both sexes and all ages exciting but very safe competition.

Jim Butler (upper left) gives green flag to a group of flying karts. Jim, owner, manager starter, referee and mediator, runs the track in a relaxed, but efficient manner. Coming through the esses (far left) a group of gals cut the corner into the main straight. Kathy Downing (left) gets checkered flag, track was holding a match contest between the Butler kart club and the Valley kart club. Match went down to the wire -- it wasn't decided 'till last race, with the Butler club winning in a real squeaker. Banker curve (above) can be seen in background as karters roar into esses.

Wherever there are karters there are innovators, as witness the twin engined class C kart, with mills mounted over front axle. Large pit area (right) is capable of handling over 50 karts.



# Putt-Putts

for progressives

This month the Putt Putt is an example of what could be done if a large factory set their mind to mass producing a kart. The result would be a very high quality item to sell around \$100.00.

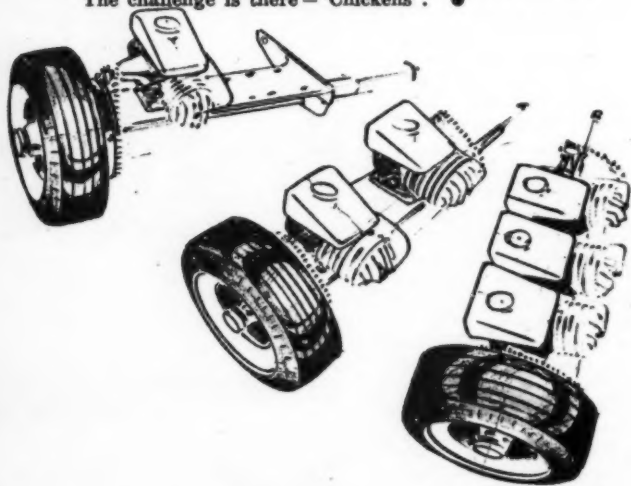
The main section which includes the seat, rear motor and wheel brackets, steering brackets and front end support is stamped out of one main piece of magnesium alloy. This unit with its many shapes and triangular sections is really a simple unit body. Although slightly more flexible than a tube frame set-up, the extra flexibility should help the handling by absorbing some of the bumps.

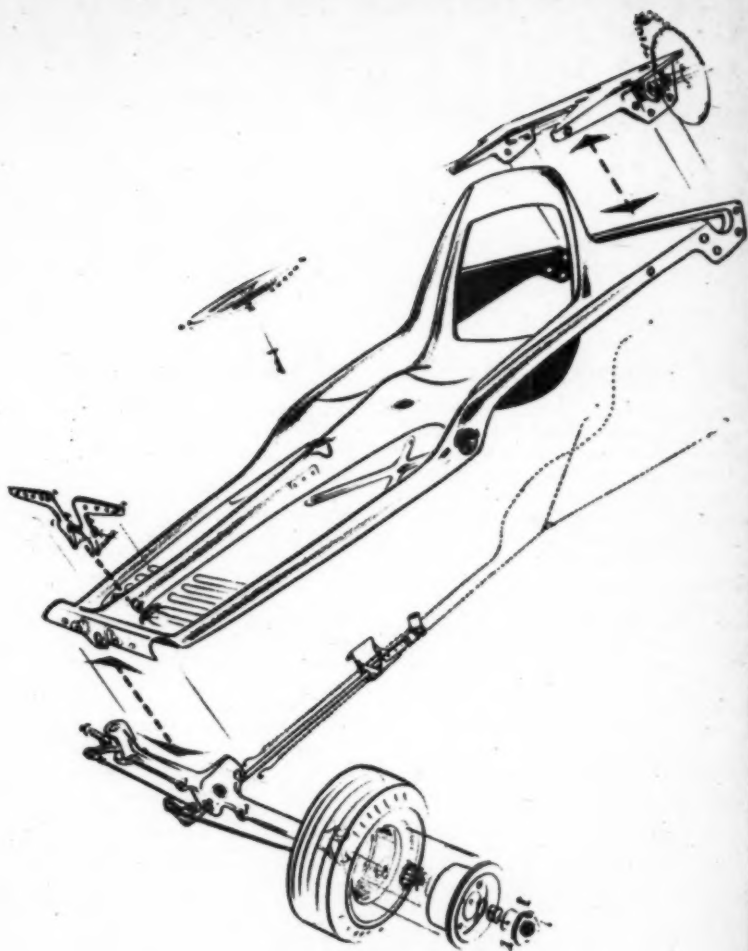
The front section is complete with all steering, spindles, wheels, pedals. The main section (a casting) comes complete with all the brackets and bearing supports included. In assembly it would be quite a quick task to push this whole unit and fasten it to the main section. The pedals now drop into place from the top and are attached to the springs and cables. The steering wheel and short support arm does the same.

As the first two units, the engine section is also complete and can be purchased with 1, 2 or 3 engines. In races the owner could buy different engine set-ups and race in more than one class.

So-oo-o the market is wide open to a forward looking industry who would not be afraid to go into karts - "Big Time".

The challenge is there - "Chickens". ●





12TH IN A SERIES OF EXPERIMENTAL GO KARTS BY C. PERRY

NOVEMBER, 1959

# THE LONGEST HAUL

Wheeling into the pits at the stroke of midnight, Friday, July 24th, an exhausted driver rose from his kart at the conclusion of an endurance run which had lasted for seven days and seven nights. The two and a half mile road racing course which twists up and down a craggy hillside in the heart of the Mojave Desert of Southern California had been lapped 2,104 times in the 168 hours for a total distance of 5,260 miles. Despite two stops of 12 hours duration which dropped the average considerably, the overall average still stood at 31.31 mph. These malfunctions were the result of ruptured fuel tanks, larger than the normal size, which had been mounted for

increased range on the endurance kart.

The kart itself was a normal production run Go Kart Manufacturing Co. chassis of the 400 B series fitted with the optional West Bend #700 engine and Go Kart slick racing tires, the latter being replaced at 3400 miles. The engine was still functioning perfectly at the end of the run, requiring only minor periodic maintenance to the plug, points and carburetor. Total revolutions for the tiny thumper were in the over 20,000,000 bracket. Aside from the gas tank, the only change in the kart's appearance was the addition of a "rabbit bar" bumper at the front to protect the steering from damage

continued on p. 92

R&C's editor gets shoved off for an eyeball-jarring ride on the rough surface of the Willow Spring Racing Course. Pathway in front of pits led through lane of cones with lap counter tripped by electric eye. Lead photo at top shows desolate terrain but gives little hint of extreme heat.



# arin ce

WFLA

I REMEMBER WHEN I FIRST MET YOU... AT THE GKCA PARTY... IF I'D KNOWN WHAT THAT MEANT I WOULD HAVE...

STOOD IN BED... KARTS ALREADY! HOW EMBARRASSING... I THOUGHT YOU WERE A 'NAME' RACER... KARTS



I FELT SO PROUD WHEN I SAW YOU WITH... PETE MOSS... STERLING SILVER.



I THOUGHT YOU GUYS JUST BLEW IN FROM SEBRING... AND THIS NECKLACE! YOU



LED ME TO BELIEVE IT WAS YOUR TIMING GEAR



CHAIN... OFF YOUR KART I FIND OUT HOW CAN I EVER FACE MY FRIEND



OHON! HERE COMES PETE MOSS'S WIFE... I CAN'T LET HER SEE ME...



HILLBILLY  
SAYS  
"PETE MOSS"  
"PETE MOSS"

HELLO DEARIE



ARE YOU GOING TO ENTER THE GIRLS RACE? PETE THINKS THEY'RE CUTE!  
OF COURSE I AM DEARIE



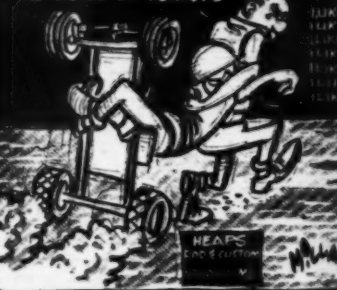
SOMETIME LATER

GET OFF MY KART! WHAT WILL YOUR SPORTS CAR FRIENDS...




THE SAME  
WAS SAID  
AT THE GKCA  
PARTY

SAY WHEN THEY END OUT YOU'RE BUSSED ON KARTS



HEAPS  
END CUTTING

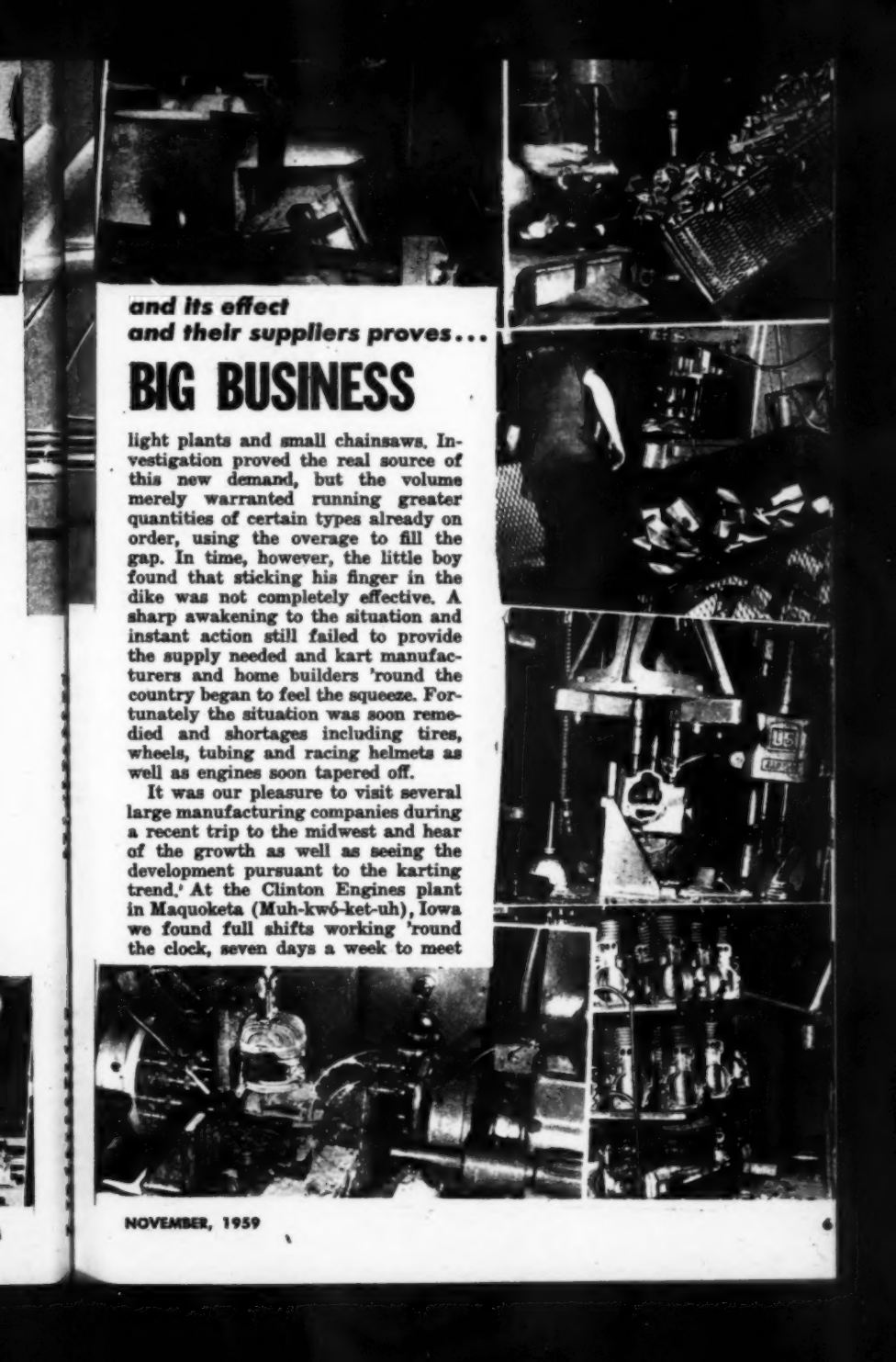
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*the rapid growth of the sport  
on manufacturers*

## KARTING IS

THE GROWTH of the karting hobby has made an impact not generally known to the individual who discovered it, begins reading every available piece of literature on the newsstands and for which he may write, and finally selects and takes delivery on the kart of his choice. It is inconceivable as rapidly as the sport has grown that somewhere along the line, supply would not be overshadowed by demand. We refrain from calling the acceptance of karting a "craze" or "fad", for from all indications, an important niche in autodom, competitive sport and family recreation has been filled and karts are here to stay. This same conclusion has been made by major manufacturing corporations who supply the component parts for the tiny terrors. At first, as orders began to increase for the inexpensive two-stroke engines used as power for the majority of the karts, the companies engaged in building them wondered if a sudden blight had hit users of power lawnmowers, pumping units,



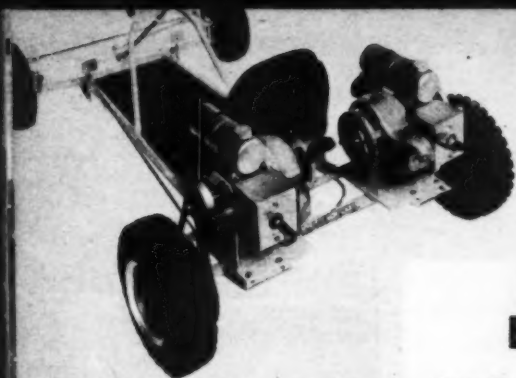
*and its effect  
and their suppliers proves...*

## BIG BUSINESS

light plants and small chainsaws. Investigation proved the real source of this new demand, but the volume merely warranted running greater quantities of certain types already on order, using the overage to fill the gap. In time, however, the little boy found that sticking his finger in the dike was not completely effective. A sharp awakening to the situation and instant action still failed to provide the supply needed and kart manufacturers and home builders 'round the country began to feel the squeeze. Fortunately the situation was soon remedied and shortages including tires, wheels, tubing and racing helmets as well as engines soon tapered off.

It was our pleasure to visit several large manufacturing companies during a recent trip to the midwest and hear of the growth as well as seeing the development pursuant to the karting trend. At the Clinton Engines plant in Maquoketa (Muh-kwó-ket-uh), Iowa we found full shifts working 'round the clock, seven days a week to meet

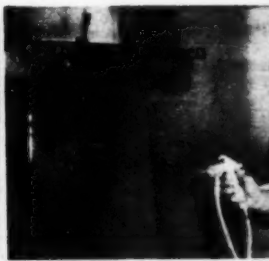
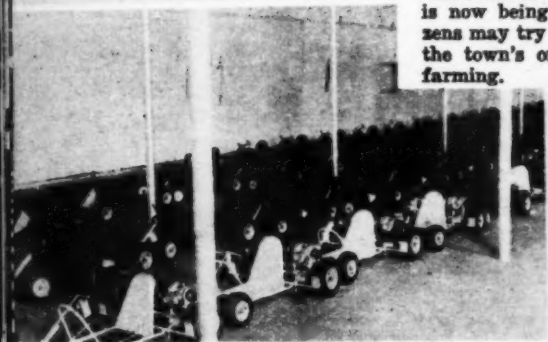
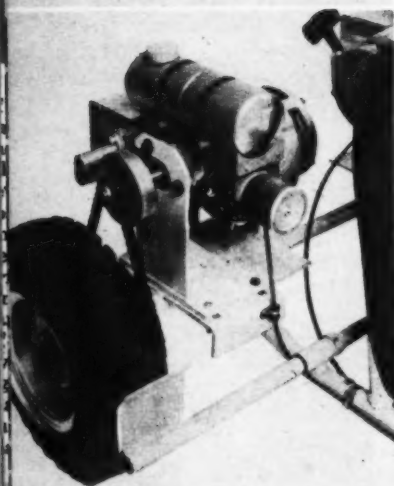


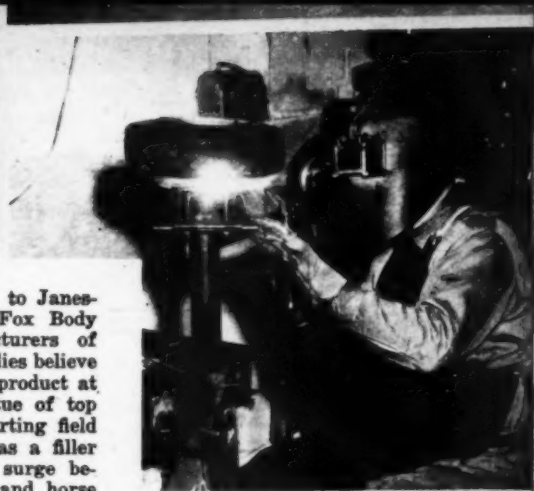


## KARTING IS BIG BUSINESS

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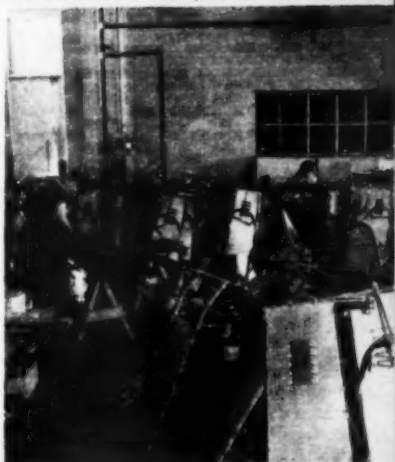
the orders as sent in by kart builders. Pictures taken during our trip show only a tiny part of the vast factory and numberless operations necessary to produce their A-400 engine which perhaps powers more karts than any other type. Assembly lines, automation, foundrys and testing facilities in a whirlwind of activity backed by a group of offices to handle reams of paperwork and evolve new designs more adaptable to the karting application are only a part of the story. Prosperity has come to a small mid-west farming community. The regular hours and overtime pay, the increased employment and 'round the clock working hours have meant new homes and cars to many. Better living standards and extra pocket money have brought in more recreational facilities; with new bowling alleys and all-night restaurants to cater to workers getting off in the early hours. As if to "feed the kitty", a new kart raceway is now being readied where the citizens may try out the local wares from the town's only industry other than farming.



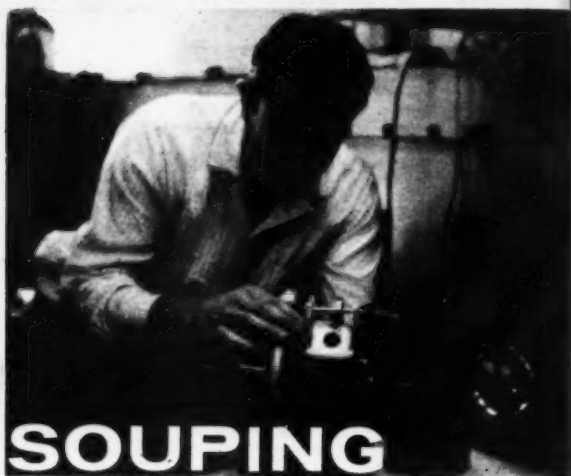


Another trip brought us to Janesville, Wisconsin and the Fox Body Company. These manufacturers of special truck and trailer bodies believe in putting forth a quality product at a reasonable price by virtue of top volume and entered the karting field a number of months ago as a filler operation to take up the surge between refrigerated trucks and horse trailers. With the entire work crew diverted to turning tons of steel tubing into frame rails and axles on giant bending and forming machines, a stockpile of ready-to-go members was on hand. Bins of mounted wheels and tires and stacks of boxed engines lined the walls where huge punch presses put louvers into floor pans and sheared them to size. All the metal parts converged on the assembly line where a team of arc welders took over, mounted the members in jigs and began the assembly. Grinders came into play to smooth up any rough spots and then a conveyor belt sped the finished frames toward the paint shop. Sub-assemblies put sprockets on wheel hubs and all met at final assembly before being shuttled to another building for storage prior to shipping or on-the-spot sale.

continued on p. 96



**If you're  
interested in kart  
racing you'll be  
interested in...**



# **SOUPING the TWO-STROKE**

**By MILFORD SCOTT**

To some people it seemed wasteful to get only one power stroke out of a cylinder during two revolutions of the crankshaft as in the four cycle "Otto" engine, so the two-stroke cycle engine was developed. This engine has the advantage of getting more power for its size and weight than the four cycle "Otto" engine but due to its design of letting the gases out of one port while the incoming air fuel comes into the other port on the same stroke some of the inlet charge is exhausted or mixed with the burned gases which causes a waste of fuel. This makes it not too practical for automobiles but its weight and size make it handy for outboards, motorcycles and go karts. There are many ways of making this engine more efficient so let's start with the intake timing.

## **INTAKE PORT TIMING**

After the piston has reached the bottom of its stroke and has started up, the by-pass port closes, at this point the crankcase is sealed off so that no new gases can come into it or flow out of it until the intake port opens; but, since the piston is travelling upward the volume of the crankcase is increased so a partial vacuum is formed. At this point the intake port opens so the fuel/air is sucked into the crankcase.

When operating at high rpm the intake port must open soon enough to allow the gases to get started. In other words, the gases, as they flow into the crankcase are interrupted in their flow. They are made to stop by closing off the port—They are made to

**ROD & CUSTOM**

Author "Mont" Scott, designer and builder of the Scott Injectors, works on a new desmodromic valving arrangement for the West Bend engine. Details on such new techniques will be found in his accompanying article.

McCulloch employee Jim Yamane (left) proved he knew how to make 'em go by copping Class A at GKCA Nationals. His Special uses the Super 55 engine, stripped down to the essentials. Affable Jimmy was ready to assist all entrants in tuning suggestions, thoughts on fuel blends, etc. Well designed kart uses Hands Engineering magnesium wheels as did many others in top ranks of point takers. Many things combine to make winning kart.



start again the next time the port opens. It takes time for the gases to get started flowing after the port is opened, and when it is closed the gases tend to continue to flow and a pressure is built up. So if the engine is turning at extremely high rpm the intake port must be opened soon enough to allow the gases to get started flowing in time. Since the gases are flowing fast in one direction there is a pressure built up so you can leave the intake port open longer than it would seem possible by a theoretical timing. Opening the port before it appears that it should be opened is called "leading" and closing it after it seems that it should be closed is called "lag". The amount of "lead" and "lag" to be used in timing a two stroke engine depends on the rpm you are planning to turn.

When engines are turned extremely fast the gases are made to flow at a very high rate of speed—so high in fact that the interrupted flow appears to be continuous.

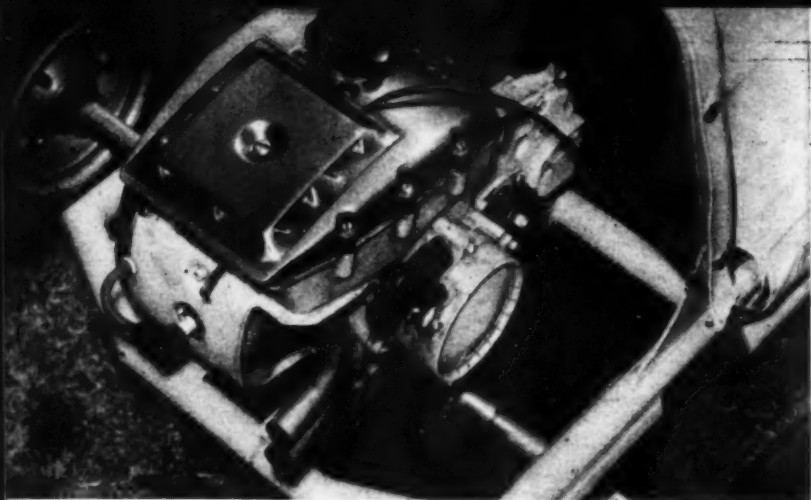
The best intake port timing so far

developed opens the intake port 50 degrees before top dead center and therefore will close 50 degrees past top dead center. This timing allows the intake port to be open for the length of time required for the crankshaft to turn through 100 degrees.

#### CORRECT EXHAUST PORT TIMING

As the piston moves down on the power stroke, the exhaust port must open before the by-pass port, so the pressure in the cylinder will be released in order to allow a new fuel air mixture to flow in through the by-pass port. The exhaust port should be as large as possible in order to let the burned gases out of the cylinder quickly—you may enlarge these ports by filing the edges square. If the exhaust ports are opened out to the extreme, the piston rings must be pinned so they will not get caught in the port. It is important to open the exhaust port at exactly the correct time. If the exhaust port is opened too

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# MORE ON GO KART ENGINES

*manufacturers build for the kart market*

By ROGER HUNTINGTON

**T**HIS CRAZY GO KART sport is developing so fast that we writers are apt to find our "deathless pros" obsolete almost before it's printed. All we can do is keep pounding away and hope for the best. So, with that word of apology, here we go again on engines...

## NEW ENGINE POSSIBILITIES

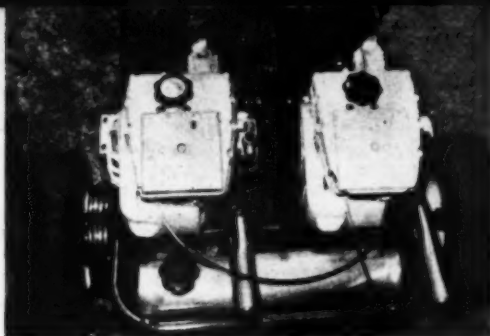
It's interesting to trace the evolution of attitudes held by engine manufacturers toward the go kart sport. A year ago, when the sport was in its infancy, they were thumbs down on the whole deal—wouldn't have a thing to do with any effort to *race* their products in all-out competition. They gave us clearly to know that the engines had been designed specifically for lawn mowers and chain saws, and

that they "wouldn't be suitable" for racing conditions. They wouldn't recommend, they wouldn't advise, they wouldn't guarantee, they wouldn't *listen*.

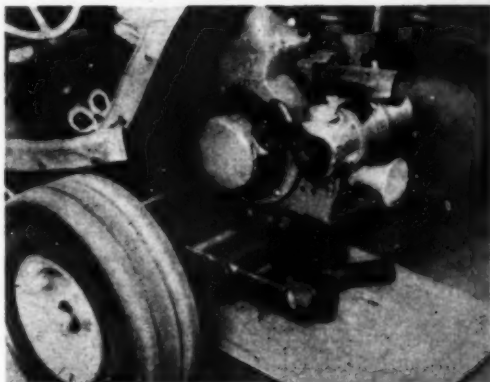
That's all changed today. Go karts have become a very important mass market for small lightweight two-cycle engines...and now these same manufacturers are actually *competing* to get their engines on karts! They're converting existing commercial powerplants with the proper mounting brackets, carb mounting, crankshaft ends, reversing procedure, etc., and really promoting them. They even guarantee. We've even got a little price and horsepower race going on! This is wonderful news for the karters. It means more variety in design, hotter competition, closer, more inter-

McCulloch Super 55A Conversion on Go Kart has an rpm of 11,000 and an hp of 6.8. The kart with a locked rear end live axle and a 7.5 gear ratio. Front wheels are 300 x 5 and 400 x 6" wheels are in the rear.

McCulloch employee Bob Ellison's Class B kart, with two Super 55A engines developing 7 hp each at 7000 rpm; note center chain drive from built-in-reduction gears in the engines...7.5:1 overall ratio



Center-mounted 4.9-cu. in. Homelite engine drives jackshaft ahead of engine — then to sprockets at outer ends of shaft to drive both wheels.



esting races.

One of the newer engine developments is the Clinton E-60. This engine was originally used on a Clinton chain saw, with right hand rotation—which meant it could only be used on the right side of a kart. It was no trick to reverse the rotation; but the bug here was that the E-60 used a beautiful die-cast cooling shroud with a spiral shape that would only work when the blower rotated clockwise. If you reversed the engine with this shroud (and many tried) you would overheat and seize up in a few minutes. So the potential of the E-60 went unappreciated for a long time.

Now the factory has gone to work on this engine—modified an A-400 stamped cooling shroud for blower operation in either direction, tooled a

new mounting bracket for the 400 bolt pattern, and a new induction flange to carry the diaphragm-type carb horizontal. The E-60 has an entirely different block and porting than the A-400's (even though displacement is the same 5.76 cu. in.), and give about 5 hp at 5200 rpm—compared with 2½-3 hp at 4500 for the 400's. Other important durability features of the '60: Forged steel connecting rod, needle rod bearing, ball mains, and a 3-ring piston for better cooling. The factory red-lines the engines at 6000 rpm for continuous operation, but they can be flashed to 6500 or even 7000 without danger of blowing. This new E-60 looks like a very important addition to the growing field of kart equipment—and the retail price of around

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## GO KART ENGINES

continued from p. 71

\$90. seems very reasonable for a real heavy-duty, high-performance Class A powerplant.

I might mention in passing that the trend now is definitely away from the sleeve-bearing lawn mower engines for karts. They just don't stand up — and you end up paying more for new engines or parts than if you bought a chain saw plant in the first place, for two or three times as much. I notice now where some companies are rebuilding used lawn mower models with needle-bearing rods, hardened cranks, and ball or roller mains — and retailing them at around \$40. This sounds like a real good deal.

Power Products engines are working out quite well in the karts, and proving reliable. Their best seller is the Model AH-81 chain saw engine, with 8.1 cu. in. and rated  $5\frac{1}{2}$  hp at 5000 rpm. This has the anti-friction

bearings throughout, weighs only 14 lbs., and retails for a reasonable \$87.75. Biggest disadvantage here is that this is a Class B displacement, so one of these engines would have to compete with two Clintons or West Bends. They are not always successful in this situation.

For the fellow who can afford to spend a little more for an engine we have the McCullochs and Homelites — "Rolls-Royce" quality in minimum transportation. A year ago these companies, with strong reputations to protect, weren't having a thing to do with go karts. But now the economic facts of life have forced their hand, and we see McCullochs and Homelites available over the counter in kart equipment shops. I see where the McCulloch people have conveniently increased the stroke of the 1959 Model Super 55A by  $\frac{1}{8}$ " to make a very nice 5.3-cu. in. Class A engine. They have also offered dynamometer

continued on p. 74



## BANTAM KART

Fully Assembled, from

# \$154<sup>50</sup>

Tune-up Stands,  
Trailers, Bodies,  
and a full line of  
Kart components.

### PRICE LIST

|  |          |
|--|----------|
| Bantam Kart (Economy Model) .....        | \$134.50 |
| Bantam Kart (Deluxe Model) (Shown) ..... | 199.50   |
| Upholstery .....                         | 17.50    |
| Roll Bar & Mounting Bracket .....        | 7.95     |

Showing you the proof of designing for function yet retaining individualism, The Bantam Kart, (as a child is able) was planned to grow. Even the (Economy Model) Bantam Kart, may when you wish, be converted to a  $\frac{1}{4}$  or  $\frac{1}{2}$  midget auto. Through this modular design, the initial cost is not lost when considering bigger thrills.

Manufactured by Bantam Racer Division

## The M. Mitchell Co

## Hudson, Ohio



# THE GOPHER

S-100

\$16950

Model Shown



- ★ Heavy Duty 1½ Inch Tubing Used
- ★ Sealed tapered Timken Wheel Bearings
- ★ A-490 Clinton Engine 2½ H.P.
- ★ 4130 Chrome Moly Tubing Used
- ★ 10" Tires on Front, 12" Tires on Rear
- ★ Completely Assembled & Painted
- ★ Color Choice: Red or White
- ★ Dual Brakes

ACCESSORIES AVAILABLE  
AT SLIGHTLY EXTRA COST

- ★ Upholstering
- ★ Clutch
- ★ Racing Slicks
- ★ Deluxe Steering Fork
- ★ Herf and Sissy Bars
- ★ AH-81 Power Products
- ★ 6 H.P. Chain Saw Engine

DEALER INQUIRIES INVITED

## GUTKNECT ENTERPRISES

734 - 11TH STREET • DEPT. RC-11 • NEVADA, IOWA

### ENGINEERED EXHAUST HEADER KITS

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Build professional-looking exhaust headers easily, using our Engineered Kits. Available for all O.H.V. V-8's including '59 models, Ford V-8-60, 85, A, Ardun and Myer Drake; Ford, Chev and G.M.C., O.H.V. 6 cyl. Also most sportscars.

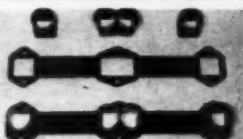
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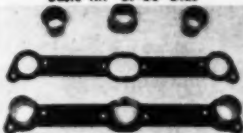
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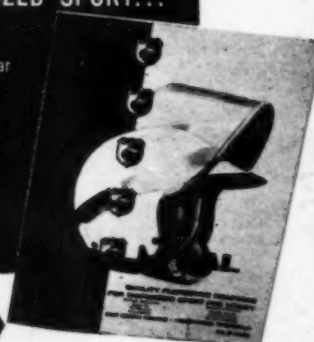
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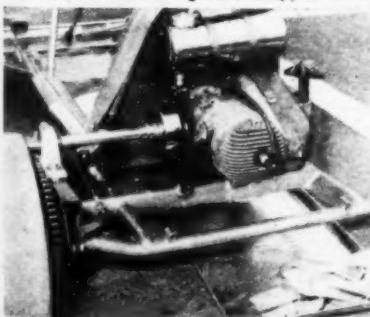
#### MORE TUNE-UP HINTS

We recently spent an afternoon at the Clinton factory in Clinton, Mich. talking to their engineers about various two-cycle engine problems—and I came up with a number of interesting points that should be passed along.

In the first place, any designer who has worked on two-strokes will tell you quick that you're working with a "chain reaction". What they mean is that every operating factor has some influence on just about every other operating factor. For instance, if you raise the tops of the inlet ports in the cylinder wall to advance the effective "valve" opening you will also affect the exhaust scavenging, the performance of any tuned exhaust stacks, combustion rate, charging pressure in the crankcase, even the reed valve performance. The engineers say there's a string running through any two-cycle engine; you pull one end and *everything* moves! This is why nobody knows very much about two-cycle engine design. There are just too many variables to pin down. You

continued on p. 76

Center-mounted West Bend chain saw engine (Class A), with clutch driving jackshaft in frame-mounted trunnion bearing. Note "dropped" axle.



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76

## GO KART ENGINES

continued from p. 75

design by experience and the seat of your pants — and hope.

Even with all this, though, the Clinton engineers could make a few general statements on certain areas of the tuning and hop-up problem. On the subjects of porting and charging, they said the major "bottleneck" (point of main restriction) in the inlet track is definitely at the ports in the cylinder wall. Porting at this point will do the most for performance. Porting out the reed plate and increasing carburetor venturi area — or even using dual carbs — are relatively less effective. The "charging pressure" in the crankcase at the time the inlet ports are uncovered is also an important performance factor. This will average about 6 lbs./sq.in. on Clinton engines up to 3000 rpm — and it's very hard to increase it (by decreasing crankcase volume) because of rod and crank throw clearance problems. Filling the crankcase with various plastic compounds can be quite effective. Some fellows rotate the crank with the filler in a soft state, to build up basic clearances — then use a knife to open them up a few thousandths more before it hardens. But don't be like the guy who had his filler crumble and clog oil holes!

I was especially careful to question the Clinton engineers about compression ratio. This is a very effective hop-up weapon on a four-cycle; how

continued on p. 78



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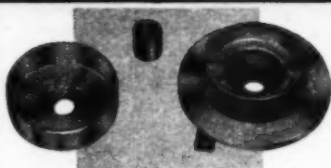
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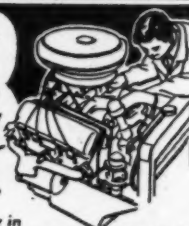
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## GO KART ENGINES

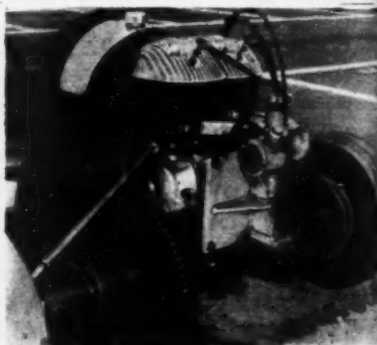
continued from p. 76

about a two-stroke? It turns out that  
compression is sharply limited here by  
pre-ignition. An air-cooled cylinder  
runs a lot hotter than a liquid-cooled.  
Also the big deflector top on the pis-  
ton in a two-cycle stores heat and acts  
as a big hot spot—which isn't helped  
by a 2-ring piston that can't efficiently  
transfer the heat to the walls. Re-  
sult: When the compression pressure  
reaches 105-110 psi spontaneous igni-  
tion is almost inevitable. This limits  
volumetric compression ratio to the  
neighborhood of 7½ or 8:1. Obviously  
alcohol fuel, with its cooling effect—  
if combined with a considerably higher  
volumetric compression ratio—should  
be a very effective hop-up trick.

I asked about re-contouring the de-  
flector top of the piston, to improve  
air flow in and out of the cylinder.  
This is risky, too, as the incoming  
mixture must be made to go steeply  
upward and wash the spark plug. If  
the mixture were only deflected up  
45 degrees or so the engine would  
likely not even run. With oil mixed  
with the fuel, of course, plug fouling  
is always critical. You've got to wash  
that plug constantly with fresh mix-  
ture—and this means air flow into the  
cylinder can't be as streamlined as we  
might like. And, on this same subject

continued on p. 80

Twin-cylinder 15-cu. in. Excelsior motorcycle  
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POWER PLANTS****GO KART ENGINES**

continued from p. 71

of combustion, we should mention that a two-cycle engine requires relatively more spark advance under equal conditions than a four-cycle; but it seems to be more sensitive to advance at the high and low end. Clinton engineers doubted that a variable spark advance would pay for itself in go kart racing, as long as engine speed is kept above about 2000 rpm at all times. (Variable spark advance is mostly to smooth the idle.)

We talked a lot about fuel mixtures and tuning. It seems a lot of kart boys (myself included, I fear) have been laboring under the delusion that power and torque are very sensitive to both the air-fuel ratio and the fuel-oil ratio. Clinton engineers say this is not true. You can fiddle with the mixture needle all day and not gain 10% in hp. Or change from a fuel-oil ratio of 8:1 to 16:1 will make barely 5% difference in power and torque. We forget sometimes that the oil burns—and, in fact, the BTU's of heat released per pound are as much as gasoline. Of course the oil has a much higher flash point or ignition temperature, so it has the effect of slowing down combustion and requiring more spark advance. So Clinton goes right along with a recommended fuel-oil ratio of 8:1 for break-in, and 12 or 16:1 for regular running. Using plenty of oil costs very little in performance

continued on p. 82



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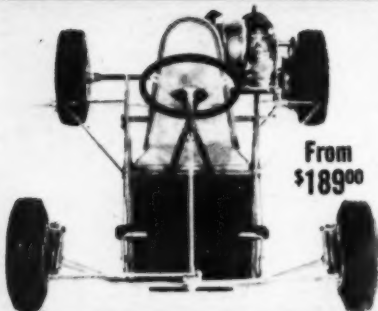
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## GO KART ENGINES

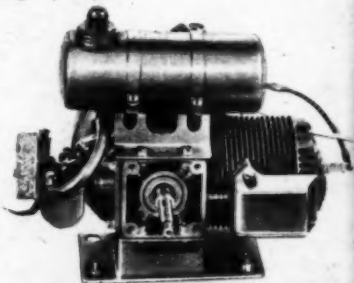
continued from p. 80

— and is wonderful insurance.

On the air-fuel ratio, they say we tend to run too lean. Get this important point: Unlike a four-cycle engine, with the two-cycle the optimum mixture is much richer at full load than with no load. Thus if you adjust the mixture needle to run smooth when there is no load on the engine and it's running free, it will be too lean at full throttle. And vice versa. Best way to adjust the mixture is still to do it under full load on a dynamometer or on the track. But if you can't do this, then richen up the mixture till the engine misses and stumbles under no load... then it should be just about right at full load. Just remember that the same needle setting cannot be optimum at both light and full load.

So let's get those karts out there and go!

Last minute developments before press time show that engine manufacturers are definitely making progress on their kart engines. Clinton has announced the E-65 engine, available in both rotations for dual engine use. They call this one the "Challenger" and rate it at 4.5 hp. List is \$96.50. Also new in the lineup is West Bend's hot 5.8 cu. in. engine (slated to replace the 510 and 645 series. Pictured below, this model has new mounts for better adjustment and integral gas tank. No spill cap on tank and exhaust stack are further improvements made with karting in mind. No definite word from other companies... but they are working! (Ed.)



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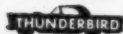
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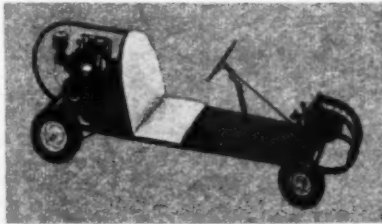
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 El Monte, California



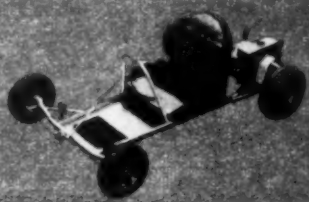
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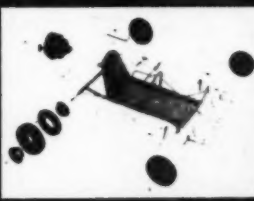
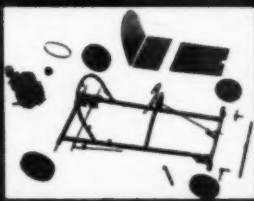
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NOVEMBER, 1959



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## SOUPING

continued from p. 79

soon, the gases will be released before they have finished expanding, and there will be a loss of power. If the exhaust port is opened too late, all the burned gases will not leave the cylinder and therefore will hinder the incoming charge. The best timing, so far developed, opens the exhaust port 112 degrees past top dead center, therefore it will remain open 112 degrees before top dead center — a small portion of the new charge will be lost on the piston upward stroke, because the exhaust port will be opened 10 degrees after the by-pass port has closed, but the advantages outweigh the disadvantages by far.

### BY-PASS PORT TIMING

The importance of the correct by-pass timing may be understood when we realize that when the piston moves downward the gases in the crankcase are compressed, and as the piston moves past the by-pass port, it opens, which allows the gases in the crankcase to enter the cylinder. By opening the by-pass port at exactly the correct time a larger charge will enter the cylinder. The exact time for the by-pass port to open is when the pressure in the cylinder equals the pressure in the crankcase; and that is about 9 or 10 degrees past the point where the exhaust port has opened. The best by-pass port timing so far developed opens the by-pass port 122 degrees past top dead center, therefore it will remain open 122 degrees before top dead center. The by-pass port should be polished smooth. This will reduce the friction of the fuel air mixture and a larger charge will enter.

### PISTONS

Pistons should be polished all over. Be careful not to take any metal off the skirts. You may take a little (.003) off the ring-lands; don't touch the ring grooves. The rings should fit so they will slide into the grooves easily, but you shouldn't be able to feel any ver-

continued on p. 88

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have gas and oil, will travel . . . fast!

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\* AIRPLANE TYPE  
STEERING WHEEL

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NOVEMBER, 1959

87

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## SOUPING

continued from p. 86

tical movements by hand. The piston should be dry lubed or electro filmed, if possible. If these platings are not available you should spray piston with spray graphite; this will keep piston from seizing.

## RINGS

Low tension rings are recommended for racing. You will have to replace them after about three races. Chrome-plated rings are not recommended because they tend to wear bare.

## ADVANTAGES OF ROTARY VALVE OVER PISTON VALVES

It will seem that if a piston intake port is made to close at 55 degrees past top dead center, it must also open at 55 degrees before top dead center. On the other hand if the piston intake port were made to open at 125 degrees before top dead center, it would have to close at 125 degrees past top dead center. Not only would this be the wrong place for it to close for efficient intake timing, but it would throw the by-pass and exhaust porting completely out of line. The most that can be expected it to time the intake port to the best closing point. All things considered, the best timing, open the intake port 50 degrees before top dead center; this means that the intake port is open for the length of time required for the crankshaft to turn through 100 degrees.

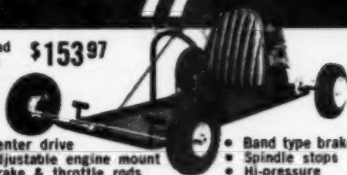
continued on p. 91



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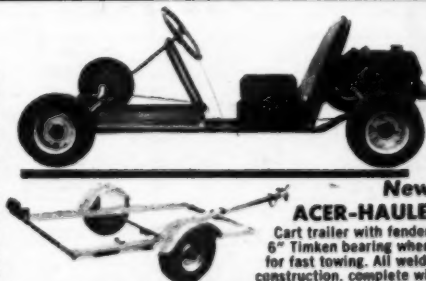
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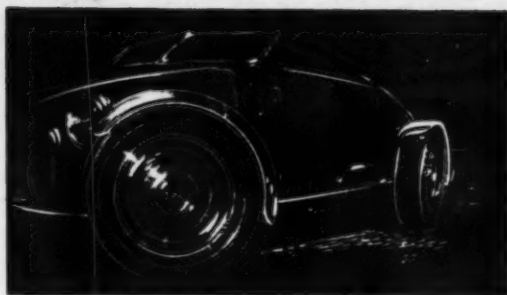
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## SOUPING

continued from p. 88

The rotary valve engine opens the intake valve at a point 125 degrees before top dead center and closes at 55 degrees past top dead center. It is therefore open for the length of time required for the crankshaft to turn through 180 degrees. Since it has been proved that a fresh charge does actually continue to flow during all this time, the rotary valve engine is able to take in a larger volume of gases on each stroke. As a result more heat is produced because there is more fuel burned and it is therefore possible to obtain more power from a rotary valve engine.

Part II of SOUPING the TWO-STROKE will appear in next month's R&C. Points included will be BALANCING, REED VALVES, HOW TO RAISE CRANKCASE PRESSURE, IGNITION TIMING, FUEL, AND CARBURETION. Don't miss out on this very valuable hop-up section.

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October 10, 11

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October 30, 31 & Nov. 1

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October 24, 25

International Motor Sports Assn.  
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Des Moines, Iowa

November 26, 27, 28, 29

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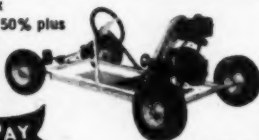
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### ENGINE SPECIALS

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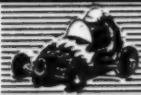
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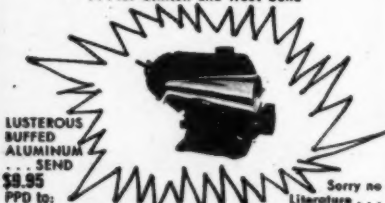
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92

## THE LONGEST HAUL

continued from p. 62

in the event of collision with a jack-rabbit, coyote or other wildlife abounding the area. The move proved wise when late in the week a giant jack-rabbit was knocked into the driver's lap where it rode for several hundred feet before bailing out. Snakes, lizards, kangaroo rats and other creatures were constant course hazards.

Desert temperatures soared near the 120° mark during the day and dipped as low as 55° one morning before sunrise, and a desert rainstorm contributed to the hardships endured by the crew who camped on the spot. Nonetheless, the kart was kept going, night and day. Night driving was by moonlight, or beyond those hours, ahead of an automobile which lighted the way.

R&C's editor, covering the activity, was quickly pressed into service to spell the tired drivers and thus became one of 28 who took turns behind the wheel. Firsthand knowledge of the track proved the ride to be anything but monotonous. The kart was run at full throttle the entire distance around the course and speeds of 65 mph were reached going in and through a downhill, off-camber "S" turn, taken in a drift. Further "editorial" duties included cooking breakfast for a hungry crew. Relief came soon as chief mechanic Kenny Young arrived from Palmdale to take over for the day. Young's son, Chris, had the second highest number of laps, not far behind lightweight enthusiast Willie Honsberger. Former R&C staffers Fred Beindorff, Spencer Murray and Marvin Patchen also figured high in lap counts.

The long haul was sponsored jointly by the Go Kart Mfg. Co. and General Petroleum. Mobilgas "R" regular fuel was used exclusively for an average of 52 mpg. A free booklet with complete statistics, photographs and sidelight details is available for the writing from Go Kart Mfg. Co., Azusa, California for those interested in the records set, preparations, drivers, etc. Ask for "PROJECT ENDURANCE". ●

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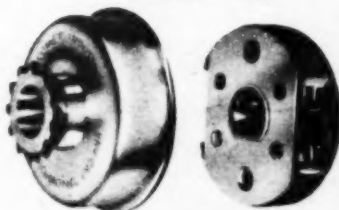
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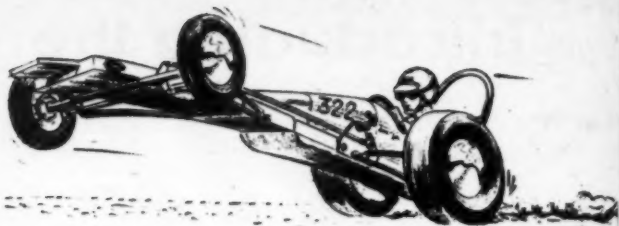
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302 Bowman St. • Mansfield, Ohio

**Dart-KART**  
BY RUPP



# backpressure



I RECENTLY PICKED UP an SAE technical paper on — of all things — *go-kart design*! It was written by Lyle Forsgren, a graduate student at the University of Washington, and he gave some good ideas on chassis setup that should be passed along.

For one thing, the oversteer-understeer relationship can be controlled to some extent on a go-kart by varying front end *caster*. ("Caster" refers to slanting the kingpin back at the top, so the centerline, if extended, will contact the road *ahead* of the tire center.) If you think about it a second you will see that this caster angle will cause the *inside front* corner of the car to be *raised* slightly when you turn the wheel — and the outside front will dip slightly. Under centrifugal force this gives us, in effect, a *three-wheel* car, since the frame will tilt and lift the *inside rear* tire. The overall effect is to increase the front end bite and make the rear wash out first. So try 3 to 10 degrees of positive front caster if you're bothered with front end wash-out and ploughing. (Incidentally, Forsgren is now building a car with adjustable caster and camber, to compensate for different courses.)

Speaking of camber — the tilt of the wheel in a direction *across* the chassis — by tilting the front wheels *inward* at the top (negative camber) you can slightly increase the maximum cornering power of the tire in the direction of the tilt. Forsgren recommends about 3 degrees negative camber for best all-around results. Our friend has also experimented a lot with locked, semi-locked and unlocked rear ends on his karts. At one time he used a unique ratchet-type differential that allowed sharp cornering without dragging a wheel, but prevented wheelspin. But he finally came back to the solid locked rear as being the best compromise between handling and traction. Equal torque loading on the two rear tires at all times gives a stability on hard corners — especially with the bigger engines up to 12 hp — that cannot be had with a differential or one-wheel drive. Forsgren has still another interesting theory that the frame should have lots of beam, or bending, stiffness, but not too much resistance to *twisting*. The twisting will let the tires follow irregularities in the track surface — to give better traction — while the bending rigidity is needed to support the vertical loads on the car. This effect can be achieved in practice by using truss-type side members, but with relatively few cross members.

Anyway, it's obvious that our Mr. Forsgren has done some 500-watt thinking about the engineering aspects of go-kart racing... and that's what we need to make this sport go. •

# Introducing the **HELL**

## **THE HOTTEST KART GOING!**

ZOOMING down the track, you have the quick-as-a-cat response—instantly, you feel the HELLCAT take your slightest driving effort and convert it into the hottest, sweetest handling Kart going.

Outstanding race-car design brings you all of the speed and performance possible. Yet, safety and endurance are retained.

**Meets all requirements of AKMA championship competition regulations**

HELLCAT quick-change features offer completely flexible planning for both Class A, Class B and Class C competition. Basically a Class A Kart, the HELLCAT can be quickly converted to the Class B WILDCAT Model with quick-change assembly units.

QUICK-CHANGE  
SPROCKET

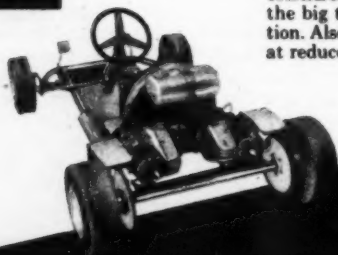
DEMAND-ACTION  
BRAKES

RESPONSE  
STEERING

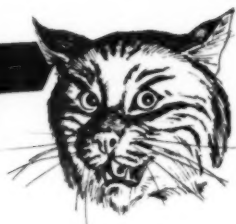
RACING  
SUSPENSION

### **RED HOT Class B WILDCAT**

Instantly converted from basic HELLCAT Model, the WILDCAT is the big threat in any Class B competition. Also available with Clinton engines at reduced cost.

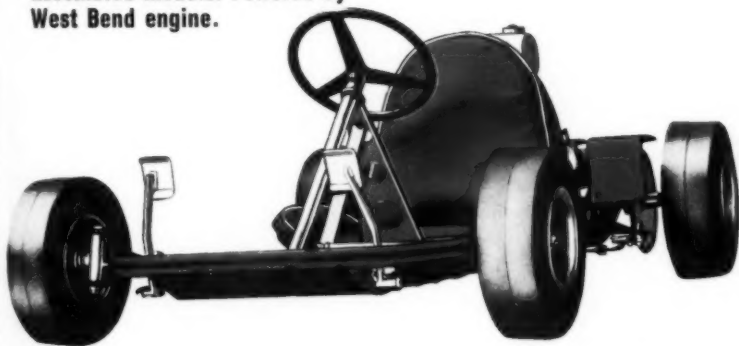


# WILDCAT



*...and it really GOES!*

**NO OTHER KART OFFERS SUCH FLEXIBILITY** — Available in kit or assembled models. Powered by West Bend engine.



## DESIGNED FOR SPEED

by Frank Kurtis designer of over 120 Indianapolis 500 competition cars.



Frank Kurtis



**PERCIVAL COMPANY, INC.**  
**BOX 703, BOONE, IOWA**

Please send  
me **FREE**  
information

The **NEW**  
**HELLCAT**  
& **WILDCAT**

NAME

ADDRESS

CITY  STATE

Dealer Inquiries Invited

# STOPWATCH or CALENDAR

the leader  
is...



prices start at **\$129.50**

For the tops in competition go karting, or fun that all the family can enjoy, insist on the consistency and dependability found in the Go Kart 400B. Race fans around the country have been thrilled by the phenomenal speeds and designed-in handling qualities that have made winners out of the same karts priced and built for low-cost family pleasure. For prices on plain and competition models see our ad on page 7.

To order your Go Kart today, simply send \$25.—balance COD. Prices start as low as \$129.50 for a complete kit, ready to build and go. Four color descriptive brochures on the Go Kart and Cycle just 25¢.

**Go**  manufacturing company, inc. 6305 irwindale, azusa, calif



Further proof of Go Kart's quality and dependability was evidenced recently when a single engined Go Kart completed seven days and nights of closed road course running for a total of 5,260 miles. This was done without structural failure of stock Go Kart components and necessitated only routine maintenance and service. The full story, including many sidelights and photos, records set and other statistics may be had by writing for a free booklet. Ask for "Project Endurance", the story of how a consistent winner over the stopwatch went on to conquer the calendar as well.



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